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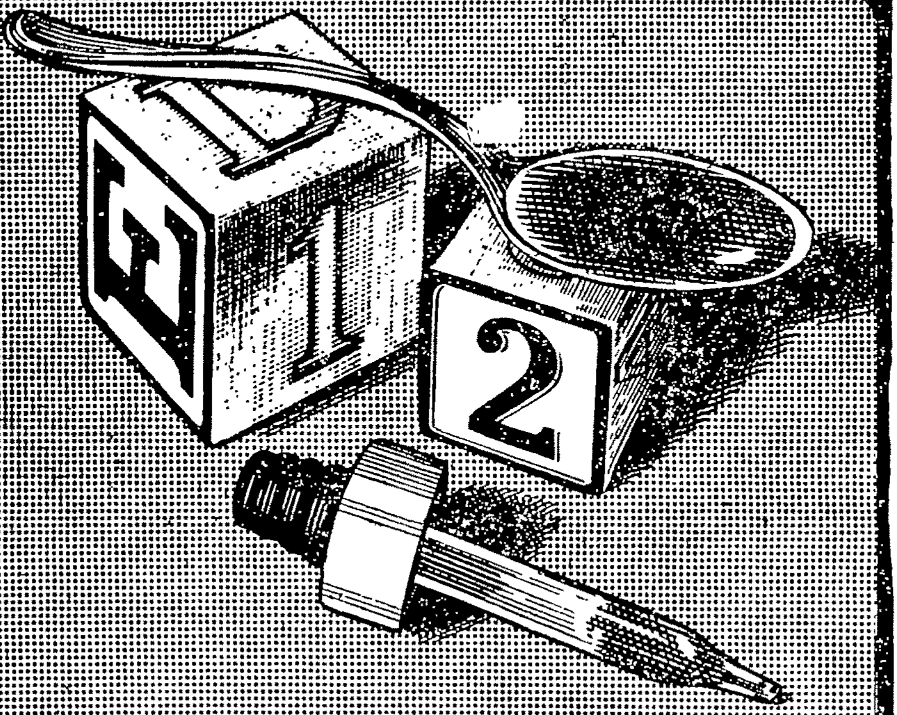

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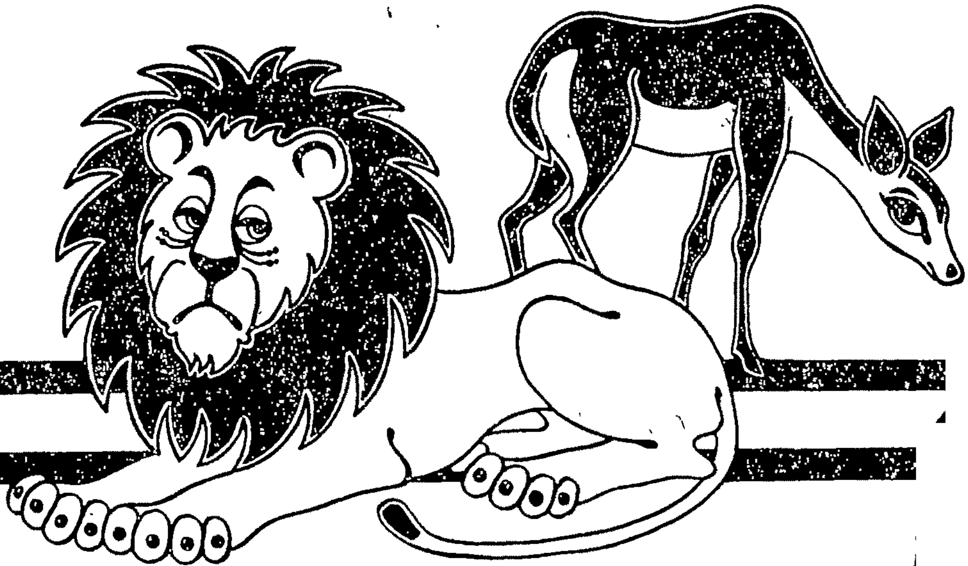

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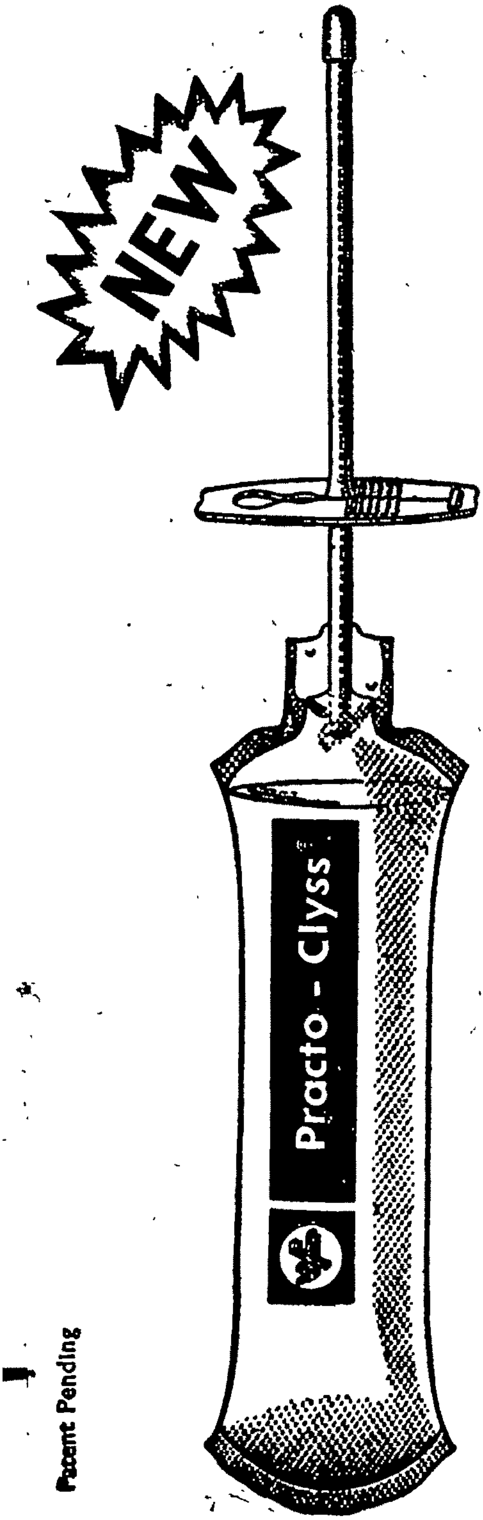

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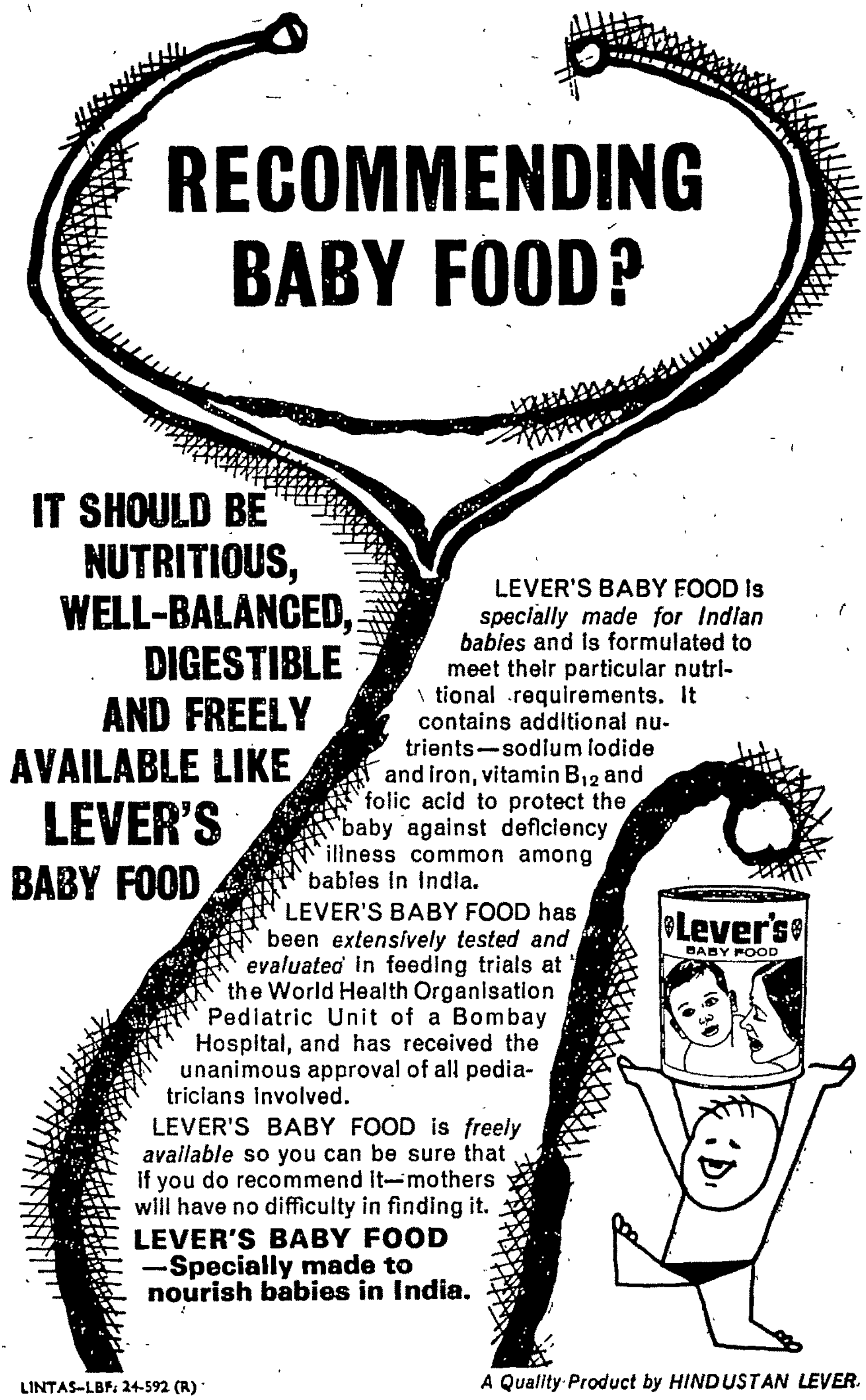

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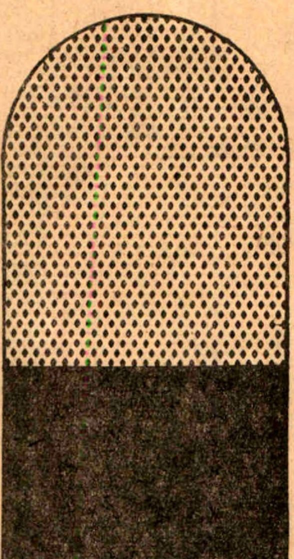

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1. Bushby, S. R. M. (1969), Postgrad. Med. J., 45, Nov. Suppl. 10
2. Hitchings, G. H., ibid, 7
3. Schwartz, D. E. et al, ibid, 32

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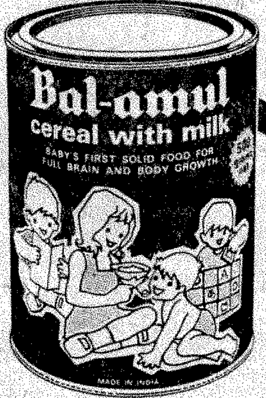

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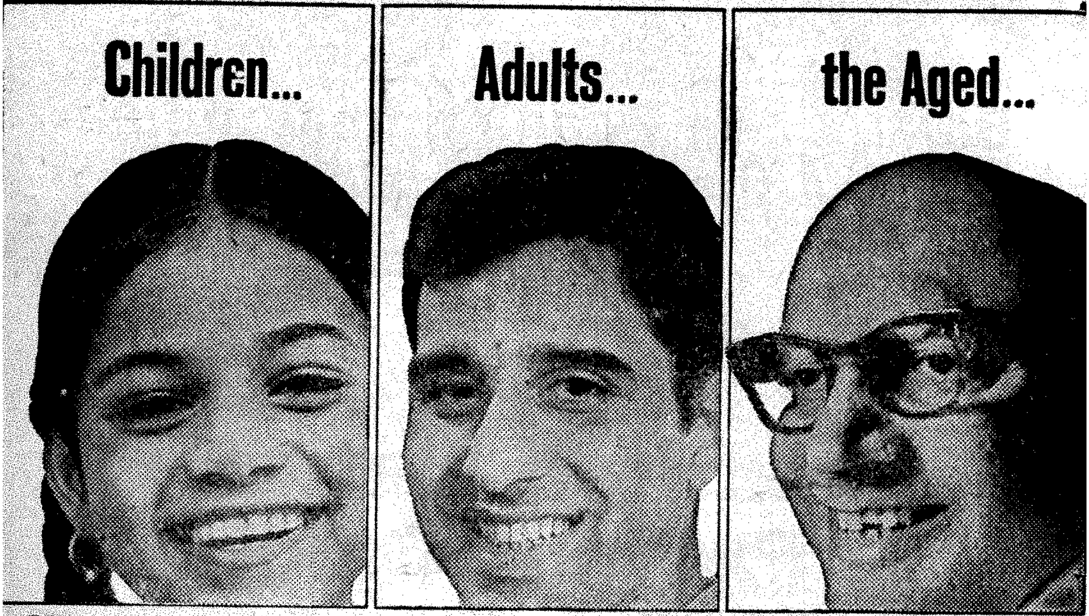
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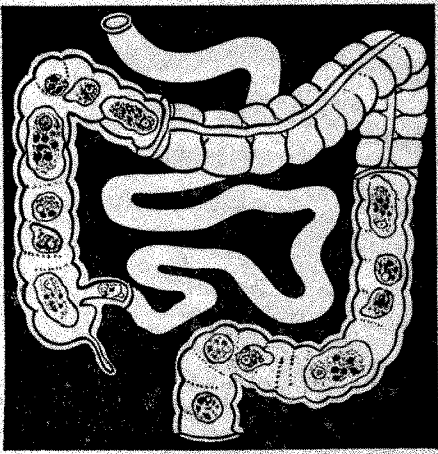

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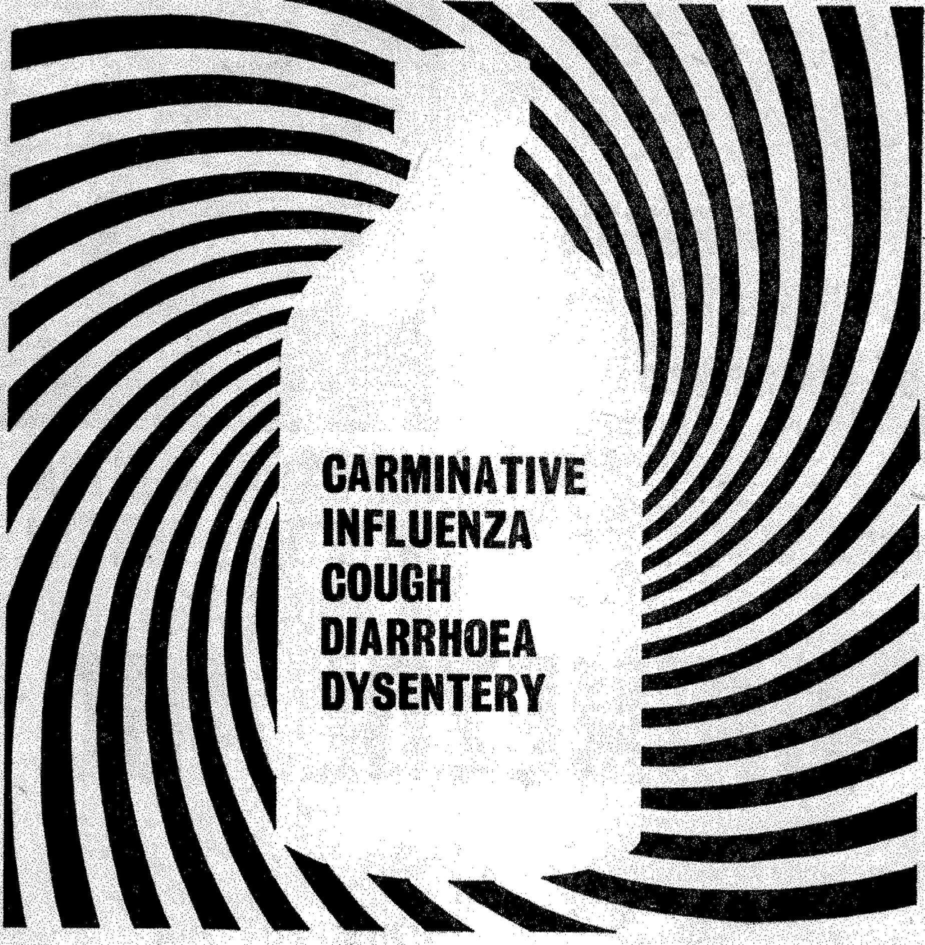

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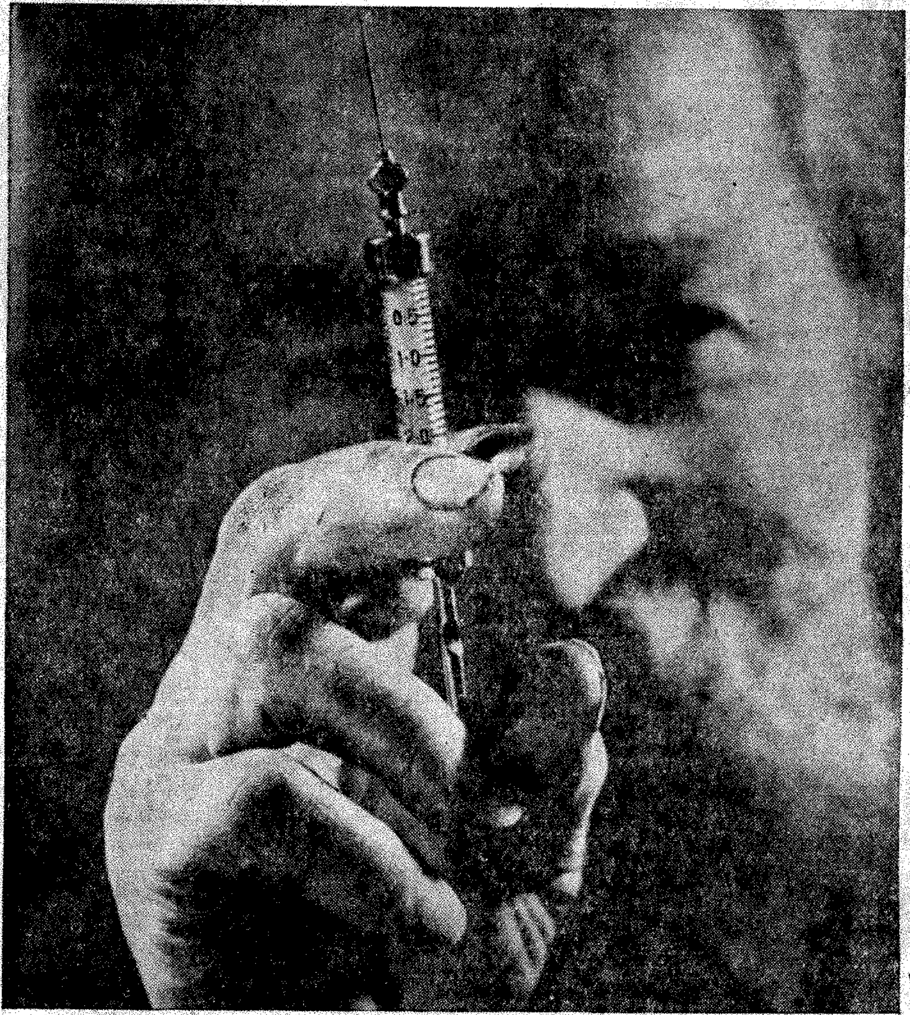

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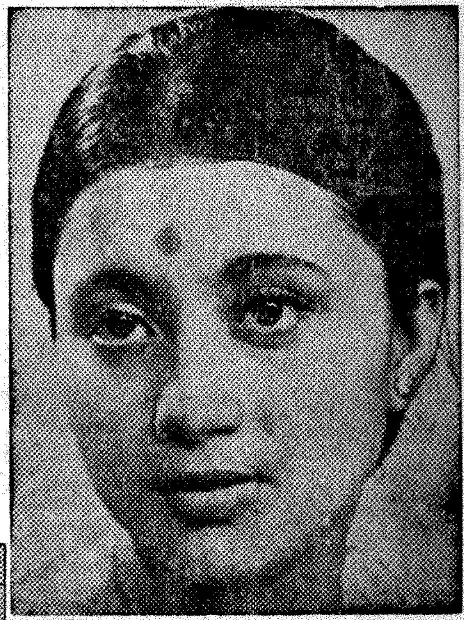

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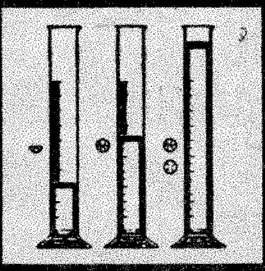

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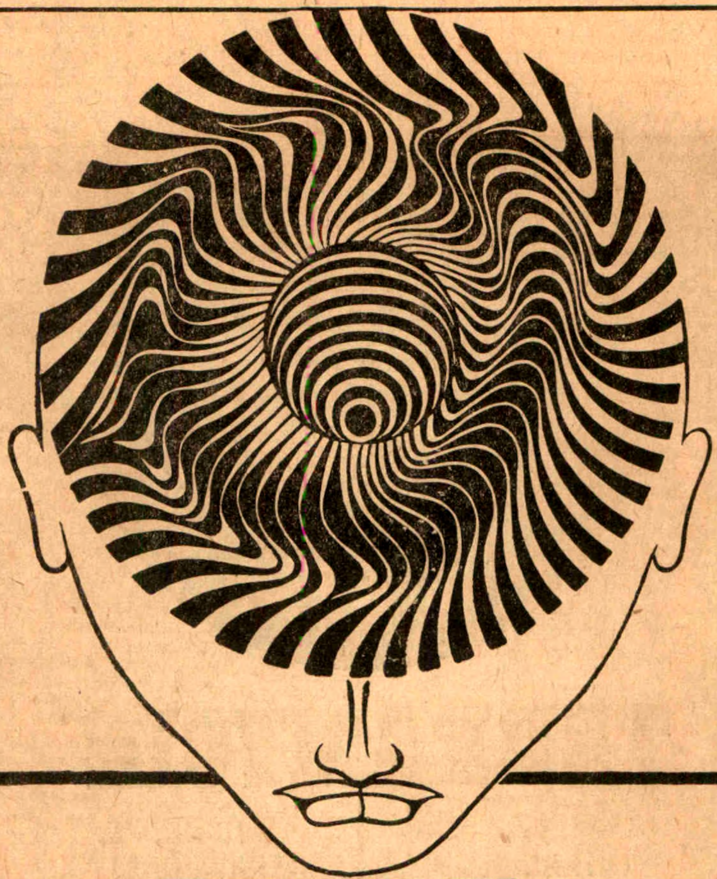

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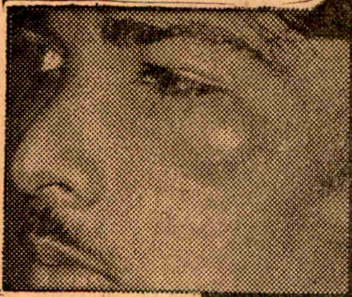

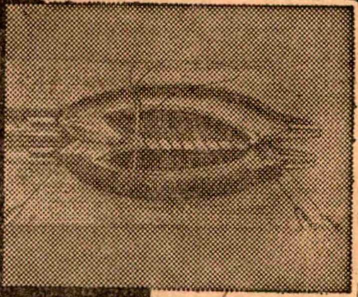

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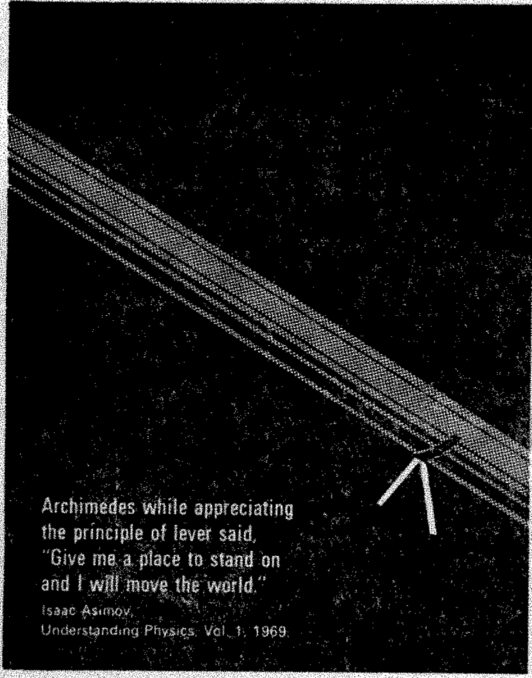

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Isaac Asimov,
Understanding Physics, Vol. 1, 1969.

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The Human Body
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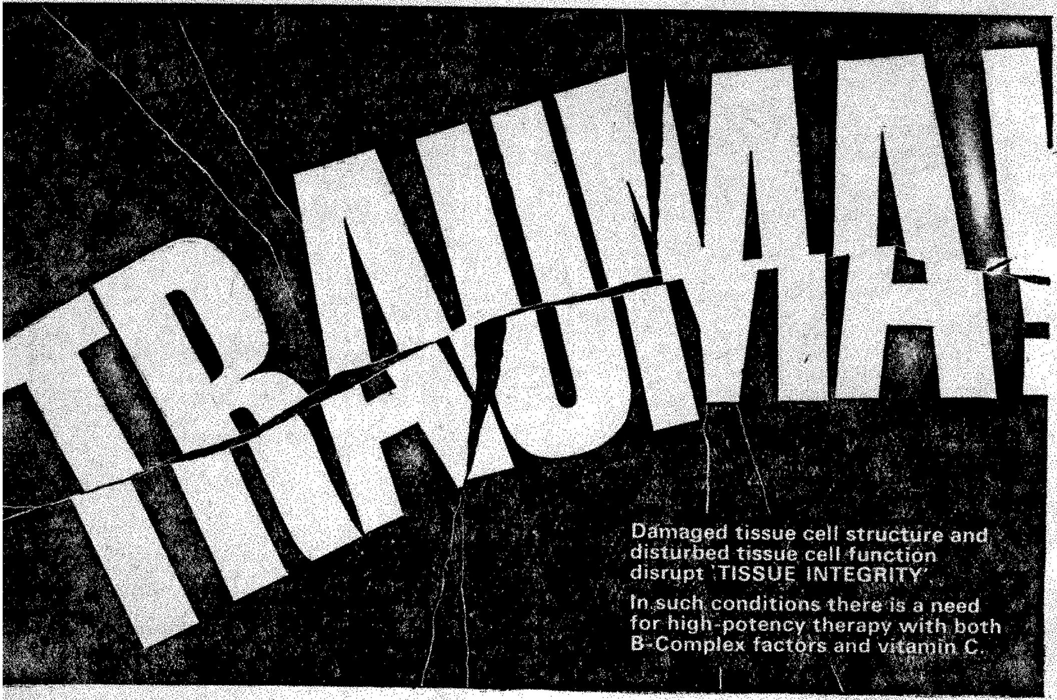

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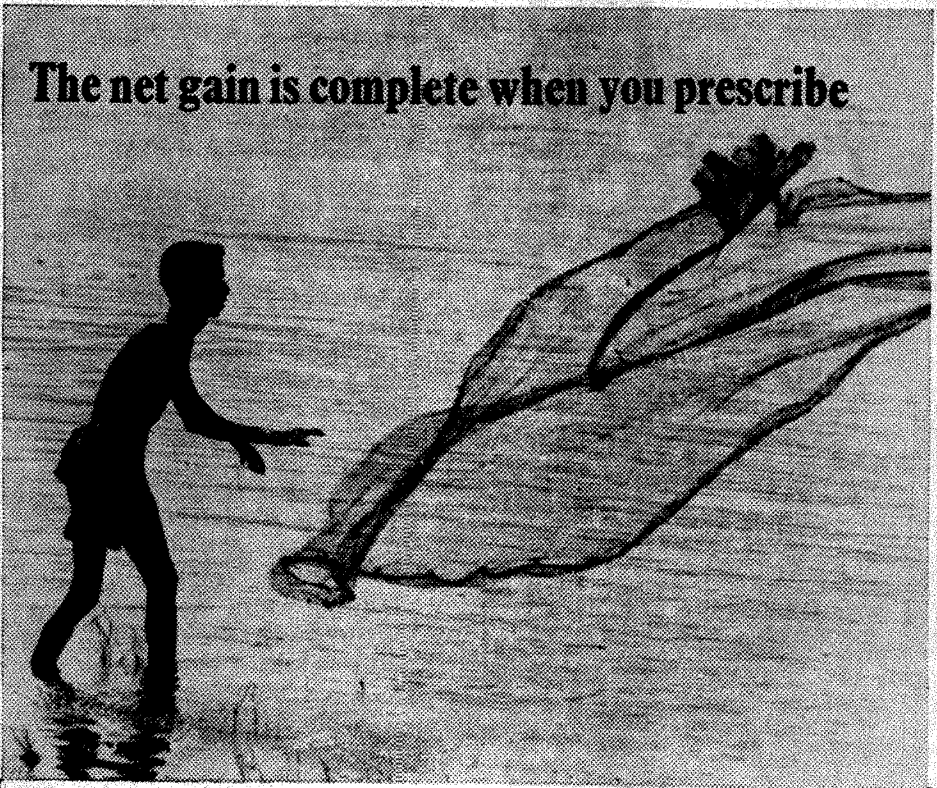
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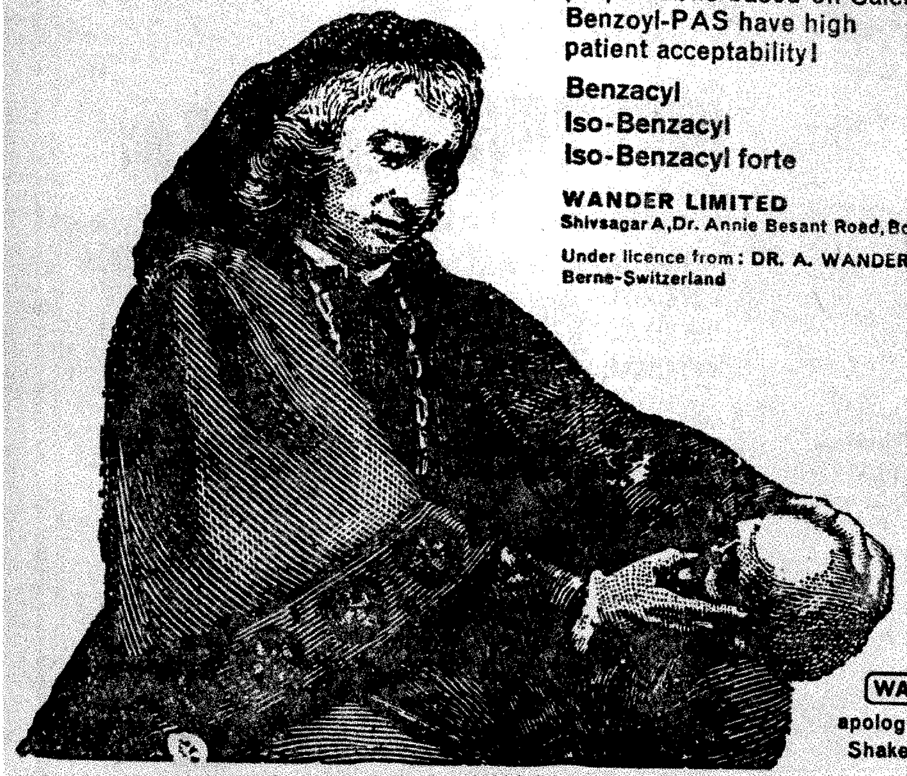

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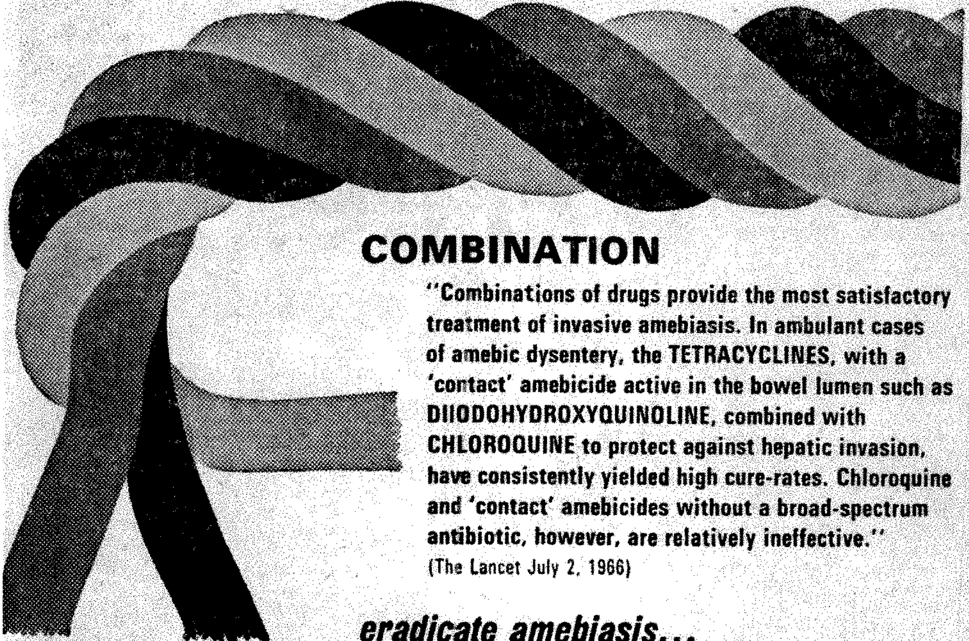

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and Government Hospitals, and in one third of the patients admitted with a history of failed forceps outside, had already ruptured the uterus at the time of admission. The age and parity are indicated in Table II. 44 per cent of them were primigravidæ and 58% were between the ages of 20 to 29 years. The causes for failed forceps are presented in Table III. It will be clearly seen that certain basic obstetric principles and conventions had been grossly violated in quite a large number of cases. For example, forceps delivery had been attempted outside in the presence of an unengaged head and/or incompletely dilated cervix in 17 cases. Cephalo-pelvic disproportion, persistent occipito-posterior positions, deep transverse arrest, unrecognized hydrocephalus, constriction ring and malpresentations such as brow, are the other causes of failed forceps.

The ultimate method of delivery is shown in Table IV.

I. Failed forceps in Tirunelveli Medical College Hospital: There were eight patients. In one, rupture of the uterus had occured (12·5%). Craniotomy was done in 3; and in the remaining four, LSCS was done with the loss of three babies (75%). There was no maternal death in this group.

II. Failed forceps cases from outside hospitals:—One third of these patients were admitted with rupture of the uterus. In one patient, the cervix was dilated only upto 4 cm., and she had an easy delivery after full dilatation of the cervix by pitocin stimulation. Mid-forceps operation was possible in 9 patients although 8 babies were lost. In 12 patients, craniotomy was done. In the remaining 5, LSCS was done with the loss of 2 babies (40%).

The maternal complications that had occurred are shown in Table V. There were five maternal deaths (10·4%). The maternal deaths were due to rupture of the uterus in 3 and severe septic shock in 2. In all these patients forceps delivery had been attempted elsewhere. Table VI shows the birth-weights of the babies. The average birth-weight was 3·12 kg. The perinatal mortality rate was 89·6%. Thirty-nine babies were born dead, four died in the neo-natal period and only five babies survived.

TABLE I

Showing the places where (Failed) forceps were attempted

	No. of patients	Maternal Mortality	Rupture of uterus
Primary Health Centres ...	24	2 (8·3%)	6 (25%)
Government Hospitals ...	11	2 (19·8%)	4 (36·3%)
Private Nursing Homes ...	5	1 (20%)	3 (60%)
Tirunelveli Medical College Hospital (Tv. M. C. H.) ...	8	Nil	1 (12·5%)

TABLE V

Showing the maternal morbidity and mortality

	No of cases	
	Tv. M.C.H.	Other hospitals
Rupture of uterus ...	1	13
Threatened rupture of uterus ...	3	8
Gross I P. sepsis ...	3	22
Maternal distress ...	0	4
Septic shock ...	0	6
Gross vulval œdema ...	2	14
Shoulder dystocia ...	0	3
Vaginal lacerations ...	1	4
Complete perineal tear ...	0	2
Atonic P.P.H. ...	2	12
Maternal deaths ...	Nil	5

TABLE VI

Showing the Birth-weights

Birth weight in kgs.	No. of babies
Upto — 2·5 ...	7
2·6 — 3·4 ...	24
3·5 — 3·9 ...	13
4·0 and above ...	3
Died undelivered ...	1

Comments :—The story of patients admitted as "failed forceps" is indeed a very sad one even today[6]. Almost every forceps operation will be riskless[8] if the application is made correctly, which will be possible only if it is preceded by a thorough examination of the anæsthetized patient. All mutilations and disasters attributed to forceps-operations invariably follow the injudicious use of the instrument or its inaccurate application.

High forceps operation is now obsolete. It is an elementary principle in obstetrics that forceps should *not* be applied to an unengaged head and applied only after a full dilatation of the cervix. The commonest cause for failed forceps is the failure to recognize and diagnose an unengaged head. Such mishaps may be eliminated if it is remembered that an engaged head is not palpable *per* abdomen and so forceps delivery should not at all be attempted when the head is still palpable *per* abdomen. A careful vaginal examination under anæsthesia, just before the first blade is introduced, should reveal the rim of the cervix, if it is not really fully dilated.

If attempts at forceps delivery are likely to prove unsuccessful except by undue force, or if the forceps blades slip, they should be removed and the cause of the failure investigated. A careful re-examination in such cases may often reveal that the method of delivery using forceps is unwarranted or unsuitable. Under these circumstances, "there should be no hesitation on the part of the obstetrician to realize the mistakes in his judgement, retreat from forceps delivery and resort to other suitable methods."[7]

Further management depends on the cause for failed forceps, the general condition of the mother, the condition of the uterus and the condition of the fœtus. Since these women have been in prolonged obstructed labour, they will be usually exhausted, dehydrated and febrile. The severity of the infection of the birth canal is related to the duration of labour and the amount of previous handling. Further, there may be trauma to the birth canal, including a rupture of the uterus, cervical tears, vaginal lacerations, complete perineal tear, etc.

These women should therefore receive appropriate supportive measures such as intravenous fluids, sedation, and massive doses of broad-spectrum antibiotics, preferably parenteral chloromycetin. The patient's blood must be grouped and cross-matched. Rupture of the uterus must be excluded with certainty before further attempts at delivery are made. When the cervix is not completely dilated, it may be necessary to give the patient a sedative and wait for several hours.

The place of cæsarean section is controversial. The fœtus is usually moribund and its life is not worth consideration. Caesarean section[4] in failed forceps frequently results in a dead baby or a baby who will die soon after birth. We do not prefer to do cæsarean section for the sake of the fœtus in such cases. Of course, it may be indicated for maternal considerations such as threatened rupture of the uterus with an incompletely dilated cervix. Another disquieting indication for cæsarean section is "traumatic intra-partum haemorrhage" resulting from cervical and vaginal lacerations where immediate vaginal delivery is considered unsafe.

Generally, craniotomy is safer than cæsarean section in patients with sepsis in the birth canal. Moreover it is particularly important, to restrict cæsarean section for young patients coming from rural areas. Even if the primary operation be safe, there is a risk of scar-rupture during the subsequent pregnancy and labour, because they may not find it possible to get admission in a hospital for ante-natal care or later for safe delivery[1] .

The maternal-mortality rate in failed forceps has been reported to vary from 2%[5] to 6·8%[3] as compared to the 10·4% of our series. The perinatal mortality is also very high in our series (89·6%) compared to the perinatal mortality rates reportted by the 2 former authors.

Acknowledgements.—I wish to express my grateful thanks to Dr. B. Subbiah, M.D., D.C.H., Superintendent, Tirunelveli Medical College Hospital, Tirunelveli and Dr. (Mrs.) S. Ananthalakshmi, M.D., D.G.O., Reader and Head of the Department of Obstetrics and Gynæcology, for according permission to publish this paper.

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Q :—Are there any drugs which can be used effectively to reduce the formation of wind in the lower bowel ?

A :—Little is known about the factors which control the volume and composition of intestinal gas or about the relative contributions of swallowed air and new gas formed in the bowel. Flatus contains very little oxygen and the remaining predominant substances are hydrogen methane, nitrogen, and carbon dioxide. There are no drugs of clear clinical value for patients who complain that they pass excessive flatus. Colonic bacteria will, however, metabolize unabsorbed (predominantly carbohydrate) food residues and produce gas. Baked beans have a well deserved reputation as gas producers a diet containing baked beans as the major carbohydrate component will multiply flatus output tenfold. Intolerance to the disaccharides lactose and sucrose, because of lack of the necessary small intestinal hydrolases for breakdown and subsequent sugar absorption, can present colonic bacteria with a carbohydrate source from which to produce gas. Formal sugar tolerance testing or more simply withdrawal of milk sugar the commonest offending agent from the diet would be helpful in sorting out this possible problem. Finally it would be sensible to ensure by sigmoidoscopy that a mucus secreting tumour in the lower bowel has not been missed.—(*British Medical Journal*, 17-8-1974).

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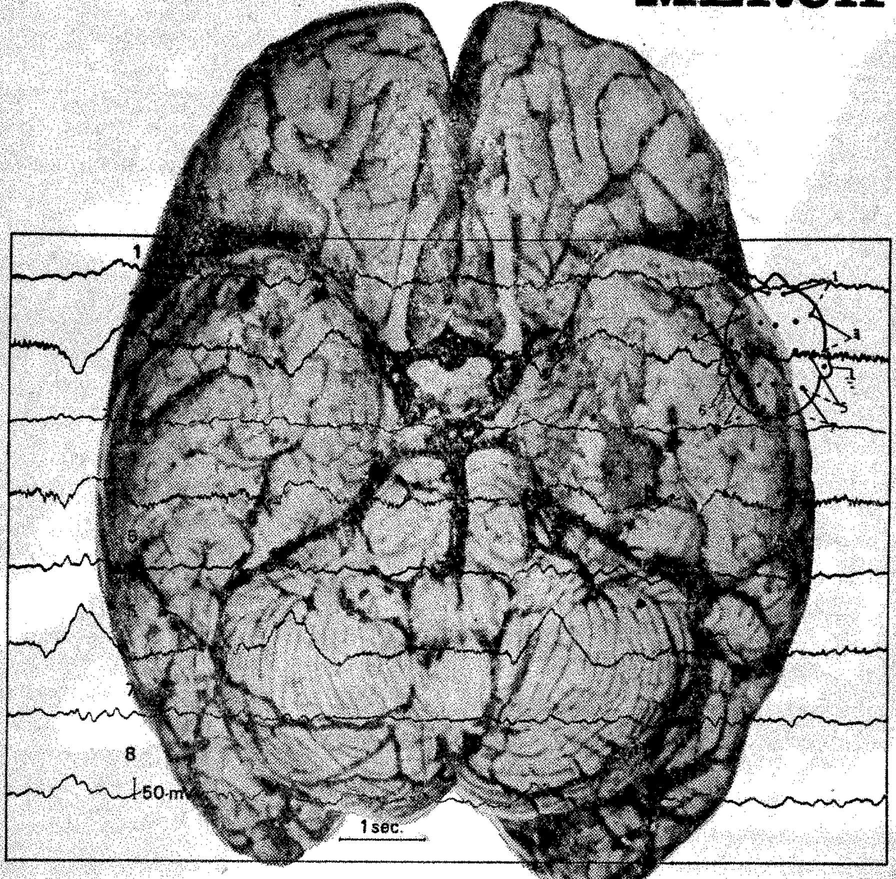

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LARYNGEAL OBSTRUCTION IN CHILDREN*

Dr. T. M. PARAMESWARAN AND Dr. R. CHACKO,
E.N.T. Surgeon *Pediatrician*
[Institute of Child Health and Hospital for Children, Madras-8]

INTRODUCTION :—The larynx in the pædiatric age-group possesses a cartilagenous skeleton which does not provide a firm-support. As a result of this structural defect, the larynx of the infant tends to be flabby and collapses easily with violent respiratory efforts. Moreover the glottic aperture is not only absolutely smaller than that of the adult; it is also, compared to the size of the body, relatively smaller. The subglottic region is smaller still, and is lined with mucosa which is notoriously liable to become oedematous with the slightest trauma or infection, and produce often complete obstruction. The normal diameter of the very narrow section of the respiratory tract in an infant is 6 mm. According to Gabriel Tucker, a diameter of 5 mm. is to be considered as reduced and 4 mm. as stenosis. Laryngeal obstruction in an infant is therefore, a serious matter and is of much greater importance in early infancy.

Stridor is the most prominently noticed symptom of any process in the larynx of the infant. Other symptoms are dyspnœa, hoarseness and aphonia. The breathing in such cases is laboured and noisy and is accompanied by a contraction of the accessory muscles of respiration, inspiratory indrawing of supraclavicular and intercostal spaces accompanied by lividity and cyanosis.

Classification of the ætiological factors in laryngeal obstruction

- Acute
  - Apyrexial
    - Foreign body
    - Scalds
    - Injury
    - Laryngismus Stridulous
    - Tetany
    - Tetanus
    - Enlarged tonsils and adenoids
  - Pyrexial
    - Acute laryngitis
    - Diptheria
    - Acute epiglottitis
    - Acute laryngotracheobronchitis
- Chronic
  - Congenital
    - Web
    - Cyst
    - Laryngomalacia
    - Vocal cord paralysis
    - Vascular anomalies
    - Lymphangioma
    - Hæmangioma
    - Micrognathia
  - Acquired
    - Papilloma

For practical purposes the causes of layngeal obstruction can be considered from the localization point of view as being:—(1) Above the glottis (supraglottic); (2) At the vocal cords (glottic); and (3) Below the vocal cords (subglottic).

Supraglottic.—***Peritonsillar abscess*** :—Mild ones do not usually cause obstruction. The abscess may push the tonsil over towards the midline and cause the anterior pillar to bulge forward and thus obstruct the airway. The palate is often immobile and hence the voice changes. Trismus is present because of irritation of the pterygoids. Patient has high fever; Hæmolytic *Streptococcus* and *Staphylococcus* and *Pneumococcus* are the usual causative organisms. The use of appropriate antibiotics and drainage of the abscess are adequate therapeutic measures.

---

*Specially contributed to the 'ANTISEPTIC'.

Retropharyngeal abscess :—This is due to infection of the 3 to 5 paired lymph nodes lying in the space anterior to the vertebral fascia, usually due to secondary infection from the primary focus in the nose, throat, sinuses and middle ear; a primary infection from a foreign body (such as a piece of bone) can occur. The abscess can be felt by the finger as a boggy swelling behind the soft palate and if a skiagram of the neck by the side is carefully taken, a narrowing of the airway by a soft tissue mass posteriorly may confirm the diagnosis. There will be difficulty in swallowing and often fluids regurgitate into the nose. Inspiratory stridor and noisy breathing herald airway obstruction to such a degree as to endanger life. It may burst anteriorly usually with choking and death or laterally into the neck, or inferiorly into the mediastinum.

Treatment is with antibiotics and incision with suction of the pus in the abscess with the head-low position, without anæsthesia. If it points in the neck, it may be incised from without.

Lateral pharyngeal space infection :—Infection of Waldeyer's ring, sinuses, middle ear or salivary glands may extend into the space. This space is bounded medially by the superior constrictor of the pharynx and laterally by the ascending ramus of the mandible, and internal pterygoids and the parotids. Fever may be insidious but once phlebitis of the jugular occurs, extension is rapid. Torticollis, dysphagia, parotid swelling and tenderness and trismus are common. Fortunately laryngeal obstruction is not severe. Treatment is with antibiotics and drainage.

Foreign body :—It is so easy to miss this condition, so it must always be considered as a differential diagnosis.

Ludwing's angina :—This is a virulent streptococcal infection involving the floor of the mouth from alveolar abscesses, periodontitis, gingivitis and infection of the lower lip and cervical glands. There is pain first under the tongue, followed rapidly by cellulitis, which infiltrates all the cervical fascial planes. The swelling is actually red and tender with dysphagia and a "hot potato" speech. Saliva drools out and airway obstruction may occur with time, if untreated. Extension to the larynx and mediastinum through the submucous tissue may pose a real danger to life. Treatment consists of intensive antibiotic therapy and drainage.

Nasopharyngal dermoid cyst :—Of all supraglottal growths which cause airway obstruction in infants, the dermoid cyst is perhaps the commonest. It may appear in the nasopharynx posteriorly and block the airway often suddenly at the age of 3 to 4 months. It can be easily visualized if carefully looked for, in this region during laryngoscopy. The treatment is effective usually with manual removal.

Choanal atresia :—This again is very perplexing if not thought of, because with nasal choanal atresia, the infant is to all intents and purposes, choked since he is unable to use his oropharynx to breath yet. This is an acquired skill which the newborn is not equipped with at birth. If thought of, this condition can be diagnosed easily by observing the absence of movement of a wisp of cotton wool held in front of the nostrils. Treatment is usually satisfactory by keeping the mouth open with a tube or oral airway.

Angioneurotic oedema :—Is a hypersensitive reaction involving the larynx and supraglottic structures. The antigen may be food, pollen, antibiotics or bee-stings. Signs and symptoms develop rapidly with airway obstruction. Treatment consists in the use of adrenaline and intravenous cortisone. Tracheostomy may be necessary.

GLOTTIC CAUSES :—*Congenital laryngeal stridor* :—This is due to a long epiglottis. The laryngeal superstructure is also abnormally soft, so that on inspiration it is sucked down into the airway resulting in inspiratory stridor. Approximately 50 percent of all causes of stridor in infancy are due to this abnormality. Normally, the infant is able to cope with this but with any upper respirary infection the airway is further narrowed and difficulties occur. Normally, the epiglottis becomes stiffer with time and by the time the child reaches the age of one year the stridor would have also disappeared.

Epiglottitis and laryngitis :-This is fairly common in infancy both due to bacteria (especially) *Haemophilus influenza* and viruses. There is fever with inspiratory stridor and a croupy brassy cough. The infection is to be treated with appropriate antibiotics and if the obstruction is severe tracheostomy should be considered.

Growths :—Polyps, angioma, lipomas, fibromas and dermoids can grow from the structures comprising the larynx and obstruction due to them can arise. Diagnosis can only be made by a careful larynogoscopy. Treatment consist in surgical removal.

Tetanus :—Here laryngeal obstruction is due to spasm of the larynx. Trismus, to some extent makes the condition worse.

Tetany :—Tetany may be manifest or latent and is usually associated with rickets. The treatment of this condition is mainly prophylactic and the addition of Vitamins A and D to the diet of the patient.

Laryngeal webs :—These are mostly congenital webs obstructing the larynx. Treatment is by surgical removal of the offending web.

SUBGLOTTIC CAUSES :—Subglottic œdema may occur in laryngeal infection producing inspiratory and expiratory stridor; subglottic hæmangioma is known; when suspected, direct laryngoscopic examination is necessary but material for biopsy examination should not be taken. Congenital subglottic stenosis due to a thickening of the cricoid cartilage is not uncommon.

Laryngotracheobronchitis :—This is mostly due to viruses but a few cases caused by *Haemophilus influenza* also occur. It may be mild with croup but often may be very severe with inspiratory and expiratory stridor demanding tracheostomy. The larynx is inflamed and narrowed with crusts. Subglottic mounding and narrowing also occur. In the trachea and bronchi the mucosa is inflamed, drying crusts may occlude segmental bronchi. Prolonged dyspnœa and anoxia can lead to exhaustion and cardiac failure Complicated with toxæmia, septicæmia, broncho-pneumonia, endocarditis, pericarditis or nephritis, the mortality mounts to 80 percent in spite of energetic treatment. Large doses of penicillin, sulphonamides or tetracycline are given. The humidity level is maintained around 80 percent. Tracheostomy will lessen respiratory stress and will also help to remove secretion by suction. Blood transfusion may be needed.

Mediastinitis :—Mediastinal infection or other space-occupying lessions can press over the subglottic region producing dyspnœa. Mediastinal emphysema, growths, adenitis or cold abscess may be the cause. The underlying cause must be treated. Tracheostomy may be required.

Vascular rings :—Abnormalities of the aorta or its main branches encircling the trachea or œsophagus may cause pressure symptoms. Surgical correction is the treatment.

Clinical material :—In the Institute of Child Health and Hospital for Children, at Madras between 1971 and 1973, ninety-nine patients with laryngeal obstruction due to various causes were treated. Details relating to their age, ætiology and to the management of some of them are given in Table.

The majority of these patients were under 2 years.

A description of a few of the interesting and rare cases mentioned in the Table will now be given in detail :

Laryngeal cysts :—In 2 children the cysts were on the epiglottis; in one it was on the aryepiglottic fold. The latter was treated as laryngomalacia until the larynx was seen for the first time when the baby was 2 months old and the cyst was diagnosed. Tracheostomy was done and the cyst excised by direct laryngoscopy.

TABLE

Showing the ætiology and the total number of patients

Causes of Larygeal obstruction	Number of patients
Laryngomalcia	44
Laryngeal cyst	3
Choanal atresia	1
Subglottic obstruction (Tuberculous)	1
Acute laryngotracheo-bronchitis	5
Diptheria with laryngeal obstruction	36
Bilateral vocal cord paralysis	5
Foreign body in larynx	2
Tracheal stenosis	1
Epidermoid carcinoma of laryngopharynx	1
Total	99

Choanal atresia :—Bilateral choanal atresia was seen in one child soon after birth. This caused cyanotic crying spells with respiratory distress. Feeding was difficult. Immediate relief was obtained by perforating the septa on both sides. The openings were kept patent with polythene tubes.

Subglottic obstruction :—A six year old child had inspiratory and expiratory stridor of 2 months' duration. The larynx was normal. Bronchoscopy did not disclose any pathology; but during withdrawal of the bronchoscope a subglottic bulge was seen Mantoux test was strongly positive. Skiagram of the chest was normal. Tracheostomy was done for immediate relief. Antitubercular treatment cured the condition.

Acute laryngotracheobronchitis :—For 5 children with severe laryngotracheobronchitis, urgent tracheostomy was done to relieve the stridor. The larynx was inflamed with thick crusts; the same could be sucked through the tracheostomy stoma. Inspite of periodic suction and maintaining humidity and the administation of suitable antibiotics, four expired.

We had 5 patients with bilateral vocal cord paralysis. All had dyspnœa and intense stridor with crowing noise during inspiration. Laryngoscopy revealed the absence of abduction of both vocal cords. Adduction was possible and so voice was present. Since the glottic chink was narrow, tracheostomy had to be done for 4 of the 5 children.

Foreign body in the larynx:—One child with stridor and a hoarse voice was found to have an impacted metallic spring between the vocal cords. There was no history of aspiration of foreign body. Relief from symptoms occurred when it was removed. In another child with hoarseness a metallic piece in the larynx was missed because the skiagram did not include the neck.

Tracheal stenosis :—In a 4 year old boy on whom tracheostomy had been done in another hospital, the tracheostomy tube could not be decanulated even after 4 months. Bronchoscopy showed stenosis of the trachea just below the stoma. Periodic examination itself dilated the stenosed area of the trachea satisfactorily and the tube was decanulated 4 months later.

Growth in laryngopharynx :—A ten year old Muslim boy was admitted for severe stridor and dysphagia. He was emaciated and cachectic. The larynx and pharynx were full of a papillomatous mass, a biopsy of which proved it to be epidermoid carcinoma. Tracheostomy was done to relieve the stridor. Gastrostomy was done for feeding. His general condition was unfit for radiotherapy, he was therefore given cytotoxic drugs. He did not improve and went home against medical advice.

Diphtheria.—Tracheostomy was done for 36 children with laryngeal obstruction in diphtheria. 30 children had extensive membranes over their tonsils, soft palate and posterior pharyngeal wall. Six had laryngeal diphtheria proved by smear examination; but their throats were clear. 16 children expired, 5 with myocarditis, 11 of toxæmia, bronchopneumonia and exhaustion.

Acknowledgement.—Our grateful thanks are due to Dr. V. Balagopal Raju, Director and Superintendent of the Institute of Child Health and Hospital for Children Egmore, Madras-8, for according kind permission to use the hospital records.

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GREEN TOBACCO SICKNESS
AN ILLNESS OF TOBACCO HARVESTERS

Tobacco-associated occupational illness occurs regularly in north Carolina tobacco fields. Green tobacco sickness is a self limited illnes chracterized by pallor, vomiting, and prostration. It occurs principally in young men who handle uncured tobacco leaves in the fields. A survey among 53 harvesters who had had green tobacco sickness and 49 control harvesters was undertaken to define and quantify the symptom complex. The illness was correlated with cropping (picking) the tobacco while it was wet ; the absorption of nicotine from the tobacco leaf is the probable cause. Cigarette smoking affords protection against the illness.—(H. Gehlbach stephen, *et al.*, in *J. A. M. A.* Sept. 30, 1974).

ARTERIAL INJURIES*

A CLINICAL STUDY

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ARTERIAL injuries are getting more and more important in today's life because life is getting faster and with greater risk as newer and newer units are coming into action and vehicular traffic is terribly increasing. The present study relates to patients admitted to L. L. R. and Associated hospitals, at Kanpur.

Introduction.—Arterial injury by definition includes any form of trauma to an artery resulting from a small contusion or a segmental spasm to complete severance of the continuity of the vessel. The early Roman and Greek physicians were concerned in controlling the hæmorrhage in arterial injuries. Helidorus, in the 2nd century A.D. first described the ligation of blood vessels. In 1759, Hallowell closed a small opening in the brachial artery with the help of a pin. Sir Astley Cooper in 1817 for the first time reported the ligation of the abdominal aorta. Lexer in 1907, clinically applied the anastomosis of a severed artery with success. Murray in 1940 used the Heparine in vascular surgery. Towards the close of the 19th century and during the early 20th centuary the technique of arterial grafting was well developed following experience gained through experimental work on animals. Homologous arterial grafts were widely used in clinical practise from 1949, for over five years. Pringle, Gorden and Murray were among the first to use autogenous vein grafts. Voorhees, Jaretzki and Blakemore (1952) reported the first success with porous and pliable plastic prostheses as arterial substitutes. Debakey *et al* (1966) reported that plastic prostheses fabricated from dacron are the best vascular replacements currently available for large vessels, where as autogenous vein grafts, are proving increasingly popular as patch graft and femoro-popliteal grafts. The first studies of enzymatic digested arterial grafts as segmented vascular grafts were begun in the middle of 1950.

In 1946 Debakey gave the classification of arterial injuries as :—(*i*) Spasm (*ii*) Contusion (*iii*) Complete severance and (*iv*) Longitudinal laceration or tear. Arterial injuries may present in an either acute form or in a chronic form either as traumatic false aneurysm or an arterio-venous fistula. Apart from clinical signs and symptoms the prompt pre-operative arteriography in selected cases is of high value.

Material and methods.—The thirty two cases studied were admitted in L. L. R. and Associated Hospitals,

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*Specially contributed to the 'ANTISEPTIC'.

Kanpur. All were examined thoroughly after taking detailed histories. Arteriography was done in selected cases. Plain skiagrams were taken in suspected cases of fracture and dislocations. Biopsy of the vessel wall was done in selected cases to see the changes occurring there. Hæmoglobin, T.L.C. and D.L.C. were done as a routine in all cases but V.D. R.L. and Kahn test were made only in suspected cases.

Patients who arrived within a reasonably short time, received a reconstructive procedure. In some the artery was repaired when a linear laceration was present. Ligation was done of the completely divided artery. Amputation of the limb was done when all hopes of serving the limb were lost. Reduction of the fracture and dislocation were made whenever such a concomitent injury was present. Excision of the aneurysm was done in one case,

Observations :—In the total of thirty-two cases of arterial trauma, both acute and chronic studied, the average age was 28 years and arterial injuries were the commonest in the age group of 1 to 10 years. The incidence of arterial injuries was higher in males than in females. There were two females and thirty males in our series. The crush injuries were the commonest cause of arterial trauma in our series as the incidence was 40·63% Blunt injuries were responsible for 21 8%. The incidence of brachial artery injury was highest in our series, *i. e.* 31 2 per cent, next came the femoral artery with 15 62%, external iliac, anterior tibial and dorsalis paedis had one case each. Two cases had double arterial injuries, *i. e.* one had brachial artery injury along with dorsalis pædis artery injury and another had ulnar and radial artery injury.

TABLE I

Showing the incidence of the type of arterial injury.

Serial No.	Type of injury		No. of patients and Percentage	
1.	Complete division	...	11 or	34 4%
2.	Laceration	...	4 or	12 5%
3.	Penetration	...	1 or	3·12%
4.	Contusion and thrombosis	...	10 or	31·24%
5.	Spasm	...	5 or	15·62%
6.	False aneurysm	...	1 or	3 12%
	Total	...	32	

Transection was the most frequently seen arterial injury caused usually by crush injury and cuts by sharp object.

Pain was the leading symptom. Only in two cases the distal pulse was palpable. Twenty-five per cent of the patients had shock due to blood loss. Gangrene was noticed in 14. Arteriography was done only in 5 selected cases, preoperative arteriography was done in three and post-operatively was done in two. Biopsy was done in four of which two were taken from upper limb arteries and two from the lower limb arteries.

TABLE II

Showing the results of various types of treatment of arterial injuries

Treatment	No. of patients	Results			
		Satisfactory		Unsatisfactory	
		No.	%	No.	%
Repair					
(a) Vein graft	2	—	—	2	100
(b) Repair of lateral tear	2	2	100	—	—
Ligation	18	17	94·2	1	5·8
Excision of aneurysm	1	1	100	—	—
Reduction of fracture	4	4	100	—	—
Conservative treatment	3	3	100	—	—
No treatment	2	—	—	—	—
Total no. of patients treated	30	27	90	3	10

In our series, ligation of the artery was made in 18 patients. In one of our cases where the popliteal artery was ligated, the patient was subjected to amputation after 18 days of ligation. In three other cases of popliteal artery injury amputation was required. Therefore it was obvious that ligation at this level is unsafe. In ten cases of brachial artery injury ligation was done only in three. Amputation was done in one case only where the branchial artery was ligated above the origin of profunda brachii artery. Ligation of radial artery was found safe in all the three patients. Out of three patients with ulnar artery injury, one required the amputation of the left ring and left little fingers. Femoral artery ligation was done in two both of whom had gangrene. Ligation of anterior tibial artery was done safely in one case.

Discussion.—The incidence of arterial injury is gradually on the increase. Debakey and Simeone in 1946 reported an incidence of 0·96% in World War II. Our incidence as compared to battle field incidence, would be much lower. The average age incidence in our series was 28·53 years which is nearly akin to the figures of Smit *et al* (1963) 1·30 years. Norman J.R. *et al* (1968), reported an average of 37·8 years. Drapnas *et al* (1970), reported the age incidence to be 31 years.

In our series crush injuries were responsible for the maximum number of cases, 40·63%, which is much higher than the number reported by Drapnas *et al* (1970), *i.e.*, 9·8%. Our series shows involvement of the upper extremity in 20 cases and lower extremity in 11 cases. Norman (1968), reported 36 cases of upper extremity and 31 of the lower extremity in a total of 85 cases. Brachial artery is the most frequently involved one in our series—(10 out of 30). Next came femoral (15·62) and then the popliteal artery (12·5%). Debakay and Simeone (1946) reported a maximum incidence of femoral artery injury, (30·5%) and then brachial artery, (16·7%). Popliteal artery was involved in 20·3% of cases. Korean war experience showed 20% involvement of the femoral artery and 12·5% of the popliteal artery.

The complete division of the artery was the most commonly seen type of arterial injury, (34·4%). Laceration was present in 12·5%, contusion and thrombosis in 31·12%. Spasm of the artery was present in 15·62% of cases, penetration in 3·12% and chronic arterial injury was present in 3·12% of cases. Drapnas *et al* (1970), reported a 33·9% incidence of perforation, 26% of complete division of artery, 25·2% of laceration and injury of the intima with thrombosis in 10·6% of cases. Drapnas *et al* (1970) reported shock in 50% of the 226 cases. Arteriography was done in 5 cases, preoperatively; it was done in two cases where it helped to determine the level of block and it was done post-operatively in three cases to see the state of collaterals. One of our patients had a popliteal artery injury and required above knee amputation after 18 days of arteriography. In cases where thrombosis was present and we took a biopsy, one case was of gas gangrene and three were of simple gangrene, in which we did a biopsy to study the changes in the arterial wall. The gas gangrene case showed early atherosclerotic changes. Other cases showed thrombosis in the lumen of the artery with periarteritis or endarteritis with oedema of the arterial wall.

In our series, vein graft was applied to two cases but without success. Doyne Williams (1968), reported from their experience of 24 vein-grafts that the chances of thrombosis in longer grafts were quite high. In 1961, Brooke Robert and W. H. Hardesly, demonstrated that results of vein-grafting are superior to other grafts.

In our series, amputation was made in 12 out of the 32 cases and the incidence was 30·8%. Debakey *et al* (1946), from their experience in World War II, reported a 40·30% total amputation-rate which is higher than in our series. Out of 10 cases of brachial artery injury only one needed amputation and was done in the case of a 13 days-old gun-shot wound whose limb had become gangrenous. It is less than the 26·4% incidence of amputation reported by Debakey *et al* in World War II, in brachial artery involvement. Out of 5 cases of femoral artery injury, amputation was done in 2 or 40%). This was lower than the incidence of 53·2%, reported by Debakey *et al* in World War II and Zippermann's incidence of 35%, reported from the Korean War. However, in all the four cases of popliteal artery injury in our series amputation (100%) was necessary, which is higher than the 72·5% incidence reported by Debakey *et al* in World War II, and much higher than the 37·9% incidence in the Korean War. In ulnar artery injuries, the amputation rate was 33 3% which is much higher than the 1 5% incidence reported by Debakey *et al* in World War II, this was because we had only three cases of ulnar artery injury and the cause of this high incidence of amputation was electric burns leading to gangrene of the fingers.

Acknowledgement.—Our grateful thanks are due to the Superintendent, L L,R. Hospital, Kanpur, for according permission to publish this article.

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TREATMENT OF HYPERTENSIVE CRISIS

A. Give 300 mg. (1 ampoule) of diazoxide *plus* 40 mg. furosemide ; both should be rapidly administered intravenously.

1. In young children or adults weighing more than 113 kg. (250 lb), give diazoxide in a dosage of 5 mg/kg.

B. Record blood pressure every 15 minutes for the first hour and then hourly.

C. Record urinary volume every two hours.

D. Repeat diazoxide and furosemide therapy when diastolic pressure is greater than 110 mm. Hg. (90 mm Hg in patients under 20 years of age, and 80 mm. Hg. in patients under 15 years of age).

E. If the urinary output is less than 50 ml. in two hours, double the dose of furosemide.

F. If diastolic pressure is not under 110 mm Hg. despite two hourly injections of diazoxide *plus* furosemide, start sodium nitroprusside infusion at the rate of 10 drops/min to keep the diastolic pressure between 100 and 110 mm Hg.—(*J.A.M.A.*, 9-9-1974).

SEXUALLY TRANSMITTED DISEASE :

No fewer than 13 diseases are now known to be transmitted sexually. Most of them can be easily cured or prevented. But they are still spreading at an increasing rate, and it has to be admitted that the medical response to this world-wide epidemic has so far proved partly ineffective. The reasons for this failure and the means of correcting the situation were discussed at a meeting on health education in the control of sexually transmitted diseases, held in Geneva, from November 11 to 15, 1974, under the chairmanship of Professor Oliver Jeanneret, Director of the Institute of Social Medicine at the University of Geneva. The meeting was attended by some 50 experts from 25 countries covering the fields of venereology, psychiatry, sociology and health education.

Of the 13 diseases under consideration, syphilis and gonorrhoea are among the most dangerous and, if left untreated, can have consequences just as serious as they had before the discovery of penicillin. Some 20 years ago the incidence of both syphilis and gonorrhoea had been successfully checked by the widespread use of antibiotics, and in the developed countries it had dropped to its lowest level ever. The full scale of the problem is still not known, but both diseases are known to be on the increase, especially gonorrhoea, which is much more common than syphilis and is regarded as being out of control in several countries Some of the statistics give food for a considerable amount of thought. In the United States, for instance, there are estimated to be 2·5 million cases of gonorrhoea, although only 800,000 have been officially notified. In Denmark and France more than one fifth of all cases, and in Sweden more than a third, occur among young people under 20. The general experience is that venereal diseases especially affect young people, and the annual incidence of gonorrhoea in many countries reaches 1% to 5% of people in the 15 to 30 years age group and may go as high as 6% to 10%. The proportions are even higher among high risk groups.

Several factors help to account for the present increase in the known extent of veneral disease. They include:—(*i*) better diagnostic methods ; (*ii*) the increased number of young people in the population an increase of 7·7% in the population of England and Wales (1958-1968) has been followed by an increase of 61·2% in the notified cases of gonorrhoea ; (*iii*) faster urbanization with the young providing the biggest contingent of new comers to the cities ; (*iv*) the migration of manpower—with six million foreign workers in European countries, for instance, and about a million sailors throughout the world with an infection rate of 16% to 20% higher than in the rest of the population ; (*v*) tourism, with more than 200 million people travelling every year since 1972 ; (*vi*) greater sexual freedom.

The report of the W.H.O. meeting points out that public opinion is still very ill informed, and that what little knowledge is spread about is incomplete, out of date or fanciful. It goes on to say that among the health professionals such ignorance is even less excusable.

The view taken at the WHO meeting was that, considering the importance of sexually transmitted diseases, all medical schools ought to teach this subject and should deal with social changes and new methods of control. In a Health Education Programme doctors should be the first target group.—(*The Medical Journal of Australia*, 1-2-1975).

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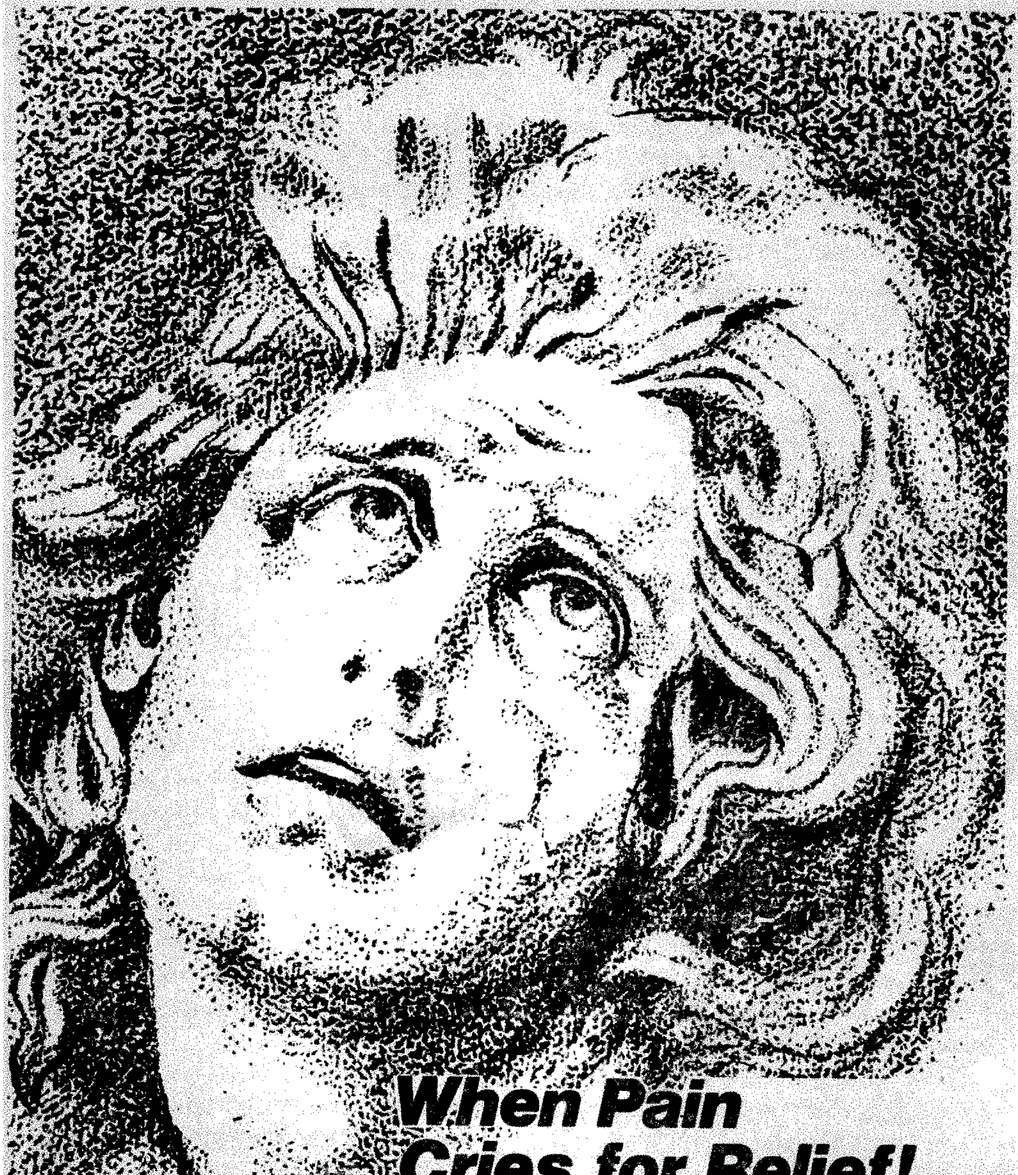

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* *TOXICOLOGY AND APPLIED PHARMACOLOGY 19, 512-518 (1971)*

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CONTROL OF DIABETES AND VASCULAR COMPLICATIONS*

Dr. M. VISWANATHAN, M.D., Dr. G. SWAMINATHAN,
Dr. A. RAMACHANDRAN AND Dr. MOHAN VISWANATHAN
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THE general aim in the treatment of diabetics is to achieve normal health and activity for them. To this end, the approach is to correct the deranged intermediary metabolism, as far as possible. A good control of diabetes should eliminate excessive fluctuations in the blood sugar levels and also prevent ketosis. In the long-term management, the most important question is whether control of diabetes in an individual could prevent the complications, especially the vascular ones. Many papers have been published on this subject; the results recorded and opinions expressed have varied very widely[1, 2, 3, 4, 5].

In 1968, we undertook a study of patients who had been with us continuously for over 10 years[6]. We tried to correlate the incidence of complications with the degree of control of diabetes. A paper was presented on this study at the First National Congress on Diabetes held at Madras in 1969. Among 44 patients, 31 were found to be under good control while in 13, the control was not satisfactory. In the well-controlled group, the incidence of chronic complications was found to be 3 to 10% as compared to 23 to 61% in the poorly-controlled group. This study has been further extended and now we have 230 patients who have been followed-up for periods ranging from 10 to 15 years. The results when analysed confirm our original finding that the incidence of complications is very much less in the well-controlled diabetics, as compared with the poorly-controlled group.

A particular study was made to find out the incidence of coronary and cerebral vascular complications in these cases. This paper presents the results, showing the influence of control of diabetes over the incidence of cerebrovascular and coronary heart disease.

Material and methods.—All the patients selected for this study were free from any complications, when first seen and the duration of diabetes, when first examined, varied from a few months to 3 years. These patients were grouped as well-controlled, if the 2-hour post-prandial blood sugar was maintained at less than 160 mg. and poorly-controlled if it was more than 200 mg. on the majority of occasions. The patients were seen 2 to 6 times in a year. All routine investigations were done including skiagrams of the chest and electrocardiograms. These were repeated every 6 months to a year and an exercise Electrocardiogram was also taken wherever necessary. The incidence of cerebrovascular accidents was assessed on the basis of the clinical findings of the stroke.

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*Specially contributed to the 'ANTISEPTIC'.

RESULTS :—An analysis of the data shows that the incidence of coronary vascular disease was 27% in the poorly-controlled group while it was only 4·2% in the well controlled group.

TABLE I

Showing the degree of control related to complications in coronary heart disease

Control	Total No. of patients	Patients with coronary heart disease and percentage
Good	165	7 or 4·2%
Poor	65	18 or 27%

A similar analysis of patients in regard to cerebrovascular disease showed an incidence of 18% in the poorly-controlled group whereas it was only 2·4% in the well-controlled group.

TABLE II

Showing the degree of control related to complications in cerebrovascular disease

Control	Total No. of patients	Patients with cerebrovascular disease and percentage
Good	165	4 or 2·4%
Poor	65	12 or 18%

A few of the patients had both complications. When both complications were taken together, the incidence was only 7% in the well-controlled group while it was 41% in the poorly-controlled group.

TABLE III

Showing the degree of control related to complications, coronary and cerebrovascular taken together

Control	Total No. of patients	Number with complications and percentage
Good	165	11 or 7%
Poor	65	26 or 41%

It will be seen that the incidence of vascular complications is much less in those who have had their diabetes well controlled.

We studied our patients also from another angle which corroborates the same point. In a retrospective analysis of stroke and myocardial infarction with diabetes admitted at our centre, we tried to assess the degree of control of diabetes in these patients.

An analysis of myocardial infarction in patients with diabetes mellitus showed that out of 80 patients, 63 (*i. e.* 80%) were not maintaining good control while only 17 (*i. e.* 20%) were under good control.

TABLE IV

Showing the extent of control with treatment of patients with myocardial infarction

Number of patients with Myocardial infarction	Good control	Percentage
80	17	20

A similar study of patients admitted with cerebrovascular stroke with diabetes showed that 49 out of 60 patients, *i. e.* 82% were poorly-controlled while only 11 patients, *i. e.* 18% were under good control.

TABLE V

Showing the extent of control of patients who had cerebrovascular strokes

Number of patients with stroke	Good control	Percentage
60	11	18

Discussion.—A comparative study with the Western literature,[7, 8, 9] shows that the incidence of complications in patients with a good control of diabetes is very low. The incidence of coronary insufficiency and myocardial infarction in diabetics in our country is reported to vary from 7 to 33%.[10, 11, 12, 13, 14] But there are only a few studies regarding the relationship of control to the incidence of complications. Vaishnava and Bhasin (1974)[15] have reported the incidence of ischæmic heart disease as 51% in the poorly-controlled group, whereas it was only 20% in the well-controlled group confirming our findings in our earlier published reports.[6] It is possible that the dietary pattern of our patients has something to do with the comparatively low incidence of complications. We have been all along giving utmost importance to the absolute necessity of diet being the first step in achieving a good control of diabetes. For diet treatment to be successful, we have to use a diet which is not very much different from the normal food of the patient. In our country where our food consists mainly of carbohydrates, we have been allowing a higher carbohydrate content, about 250g a day, while restricting the total calorie to about 1800. We found that many of them lacked enough protein-intake and we corrected this defect by utilising vegetable protein especially in the form of Bengal gram and green gram. This has resulted in a marked reduction in the fat content in our diet. Thus our diet may be called a calorie-restricted low-fat, high-carbohydrate, high-protein diet.

TABLE VI

Showing the high corbohydrate and high protein diet.

	Grammes and Percentage	Calories
Carbohydrates	200 or 54 %	1000
Proteins	120 or 26 %	480
Fat	40 or 20 %	360
Total ...	...	1840

With this diet, we observed that diabetes could be controlled very easily and quickly. This aspect has been already stressed in our paper presented at the Seminar on Disorders of Carbohydrate Metabolism held at Delhi in 1974.[16] Similar results have been reported by Moser and Anderson.[17] The usefulness of a high carbohydrate diet has been supported by Bush and Moriawaki[18] from Japan and by Brunzell *et al*[19] from the University of Washington. In the ætiopathogenesis of atherosclerosis, the two main risk factors are :—cholesterol and triglycerides.

We studied the lipid patterns of many of these patient and observed that there was a fall in both cholesterol and triglyceride, with this diet, which occurred early and which continued to persist in the follow up[16]. In a further study of 250 patients with diabetes mellitus, the serum cholesterol level fell from a mean of 272 mg. to 226 mg. in a period of 3 months. The fall of triglyceride was more immediate and significant. It fell from a mean of 168 mg. to 84 mg. in the some period. It is possible that our diet has contributed to the reduction in the incidence of vascular complications through this mechanism. This study was continued and the results are under publication.

Another point to be stressed is the comparatively lower dosage of drugs that we use for our patients. The usual dosage required in our cases is about 0·5 to 1 g. if it is tolbutamide or 125 to 250 mg if it is chlorpropamide or 1·25 to 5 m. if it is glybenclamide. In many of the cases we use a combination of sulphonylureas and phenformin which has helped us to bring down the dosage further. It is possible that the lower dosage of drugs used, might also have played a part in the reduction of the incidence of vascular complications.

This study shows that the control of diabetes is definitely worthwhile and would help the individual to lead a longer, healthier and fuller life.

Summary.—1. A study is presented of 230 patients with diabetes mellitus who have been followed-up for 10 to 15 years.

2. The incidence of vascular complications is much less in the well-controlled group as compared to the poorly-controlled group.

3. A retrospective analysis of patients with vascular complications and diabetes also shows that only a small number of them had their diabetes under good control.

4. The possible ætiological factors producing this low incidence are discussed.

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PROGNOSIS IN CORONARY CARE UNIT NON-INFARCTION CASES

An average 17·9 months' follow-up was obtained on 169 patients with chest pain who were admitted to the Stanford University Hospital coronary care unit to rule out a myocardial infarction. Criteria for study included electrocardiograph ST-T abnormalities in the absence of infarction as evidenced by lack of new Q waves or serial enzyme determinations.

A high incidence of subsequent cardiac death following discharge from the coronary care unit was noted, with 4·2% one-month, 10·1% one-year and 19·7% two-year mortality with 43% of the deaths occurring suddenly. More aggressive evaluation, treatment, and follow-up is indicated in this patient group.—(Mario G. Lopes, M.D. *et al*, *J.A.M.A.*, 17-6-1974).

PRELIMINARY TRIAL ON THE EFFICACY OF *PHTIVAZID* AS AN ANTI-TUBERCULAR CHEMOTHERAPEUTIC AGENT*

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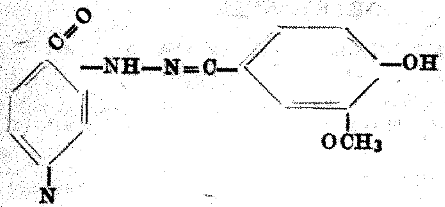
PHARMACOLOGY *Phtivazid* is P-Oxy-Methoxy-Benzaldehyde Isonicotinoyle Hydrazone with the following structural formula.



The drug was synthesized and used in Soviet Russia. It is claimed that this drug is a very effective anti-tubercular agent and free from toxicity even in high doses. The drug is marketed in India by Phytosynth Laboratories, Cochin in 0·3 G tablets.

The aim of this study.—Was to verify the efficacy of Phtivazid as a chemotherapeutic agent for treating pulmonary tuberculosis.

Material and methods.—Sixteen patients with pulmonary tuberculosis admitted to the T. B. Hospital Pulayanarkottah, Trivandrum were selected for the trial. Patients with chronic pulmonary tuberculosis who have had irregular interrupted treatment and who were sputum-positive for *A. F. B.* and had advanced x-ray lesions were selected at random for the trial. This group was given only Phtivazid in a dosage of 0·6 G (2 tablets) three times a day before meals (1·8 G per day). In addition vitamins and iron were given for supportive treatment. Penicillin or broad spectrum antibiotics were also used as and when necessary to combat secondary infections. Patients received the usual hospital diet containing 2500 calories per day. Monthly reviews were made to assess the symptomatic improvements, weight gain. E. S. R., sputum conversion and radiological improvement for a period of 3 to 6 months.

RESULTS.—*(1) Age and sex incidence* :—There were sixteen patients in the study, (10 males and 6 females).

TABLE I. **Showing the age and sex distribution**

	11 to 20 yrs.	21 to 30 yrs.	31 to 40 yrs.	41 to 50 yrs.	51 to 60 yrs.	60 yrs. and above
Males	Nil	Nil	2	3	3	2
Females	Nil	1	2	2	1	Nil

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* Specially contributed to the 'ANTISEPTIC'.

Thus 68·7% of the patients belonged to the age group above 40.

(2) ***Previous treatment*** :—All the patients had had more than one interruption during previous treatment.

(3) ***Duration of illness*** :—

TABLE II

Showing the duration of illness at the beginning of treatment

Duration	1—2 yrs.	2—3 yrs.	3—4 yrs.	4—5 yrs.	5—10 yrs.	Above 10 years
No. of patients	3	5	2	2	2	2

4. ***Symptoms*** :—All patients showed symptomatic improvement during the first three months. Two patients developed symptoms after 4 months, though initially they had shown good improvement.

TABLE III

Showing the weight-changes during therapy

Duration	No. of patients	Weight gain		Stationary	Loss of weight
		Up to 5 kg	5 kg and more		
3 months	16	12	2	2	Nil
6 months	13	6	2	3	2

5. ***Weight change*** :—During the first three months, all except two patients gained in weight, and 2 patients remained stationary. During the second three months 3 patients did not gain further in weight. One from the stationary group and 2 who had initial weight-gain started losing weight. These 2 patients who had sputum-conversion at 3 months, again became sputum-positive.

TABLE IV

Showing changes in E. S. R.

Duration	No. of patients	Normal	Improved	No change	Deteriorated
3 months	16	1	15	Nil	Nil
6 months	13	2	9	Nil	2

6. ***E. S. R.*** :—The E. S. R. became normal in one patient by 3 months. At the end of 6 months 2 who had shown improvement initially had deteriorated.

7. ***Sputum examination*** :—Only direct smear examinations were made. Initially all were sputum-positive. At the end of three months 8 patients (50%) showed sputum conversion.

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TABLE V

Showing results of smear examination

Duration	No. of patients	Smear positive for *A.F.B.*	Smear negative for *A.F.B.*
3 months	16	8	8
6 months	13	9	4

But at the end of 6 months, 3 patients again became positive. Of these two had symptomatic, hæmatological and one showed radiological deterioration necessitating a change of therapy. One sputum-negative patient at the end of three months and 2 sputum-positive patients at the end of four months were discharged at their request.

TABLE VI

Showing the changes in cavitation

Duration	Disappearance of cavity	Smaller and fewer	No change	Increase in size
3 montos	1	7	1	Nil
6 months	2	6	Nil	1

Radiological improvement :—9 out of 16 patients had cavitary lesions. Of these one had cavitary closure in 3 months. In 7 there was slight improvement, but in one there was no change. At the end of six months, one more patient showed cavitary closure. The patient who was stationary at the end of 3 months showed definite signs of deterioration.

TABLE VII

Showing the overall X-ray appearances

Duration	No. of patients	Excellent	Significant	Moderate	Slight	Deterioration
3 months	16	0	1	6	8	1
6 months	13	1	2	2	5	3

At the end of three months 38·8% had more than slight radiological improvement. By six months 23% showed considerable improvement and the same number had deteriorated. The overall improvement at the end of six months almost remained the same (38 5%).

Side-reactions :—There were no hypersensitive or toxic reactions to the drug during the period of study. The drug had good patient acceptance.

Discussion.—Phtivazid is claimed to be a non-toxic and highly efficacious anti-tubercular drug by Russian workers. Hence a preliminary trial was conducted to find out if the drug had any anti-tubercular activity. The drug was used alone. All the patients in the study had re-treatment, belonging mainly to the over 40 age-group. These two adverse factors were considered to be real whet-stones to test the efficacy of the drug.

Initially all the 16 patients showed symptomatic improvement. 87·5% of the patients gained in weight in the first 3 months of therapy. In the next three months it was not so marked. The E.S.R. also showed a similar pattern with remarkable improvement in the first 3 months. 50% of the patients became sputum-negative at the end of 3 months, but three of them subsequently became sputum positive. Radiologically cavitary closure was noted in 2 out of 9 patients (22%) at the end of six months. The overall radiological improvement was *significant* to *excellent* in 23%. Another 15·4% (2 cases) had *moderate* improvement. Only 23% had deteriorated. No side-reacions occurred and all the patients accepted the drug with no ill effects.

This preliminary study shows that Phtivazid possesses effective anti-tubercular activity. The significant thing is that it was able to produce improvement in elderly re-treatment patients when given alone. During this trial 2 patients deteriorated after showing initial improvement. This would appear to show that like any other anti-tubercular drug, resistance can develop if it is used alone. Further extensive studies are required to evaluate the potentialities of the drug in new patients and resistant cases.

Summary.—Sixteen patients with pulmonary tuberculosis were given Phtivazid alone for retreatment. The effect was watched for a period of 6 months. Phtivazid was found to have significant anti-tubercular activity. When given alone the bacilli develop resistance to the drug. No side-reactions were noted during the period of the study. Further work on an extended scale will be needed to evaluate the drug's usefulness and efficacy.

Acknowledgement.—We are thankful to all our colleagues working in this hospital for their kind co-operation.

ACTION OF DIFFERENT BRAN PREPARATIONS ON COLONIC FUNCTION

Two different types of commercially available bran were studied. One of these was composed of flake like particles (coarse bran) whereas the other had smaller, finer particles with a floury component (fine bran). The effectiveness of the two preparations in lowering intraluminal pressure and decreasing transit time in patients with constipation and diverticular disease was assessed. Only coarse bran promoted changes at the dose used, The physical properties of the brans were examined in an effort to explain their differing effects. It is concluded that water holding capacity, upon which the beneficial effect of bran may depend, is a function of particle size. The greater water holding capacity of coarse bran makes it preferable for the treatment of colonic disorders.—(Kirwan, W. O., *et al.*, *British Medical Journal*, 26, Oct. 1974).

XANTHINOL NICOTINATE IN NONHAEMORRHAGIC CEREBROVASCULAR ACCIDENTS OF RECENT ONSET*

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With increasing life expectancy, the incidence of cerebrovascular accidents are on the increase. These are cripplers ranking third among killers of men. The high morbidity and mortality caused by cerebrovascular accidents is due to the poor methods available of effective tratment. In recent years *Xanthinol nicotinate* has been tried with success in the management of many vascular disorders like thromboangitis obliterans. Rayhaud's disease, post operative thrombosis, cerebrovascular disorders, etc. The present study was intended to evaluate the efficacy of this drug in the management of non-haemorrhagic cerebrovascular accidents of recent onset.

Material and methods :—The present study relates to 50 patients with nonhæmorrhagic cerebrovascular accidents admitted to the General Hospital at Udaipur, within 48 hours after the onset of the stroke. The diagnosis was made on clinical grounds, *substantiated* in some cases with cerebral angiography. Only patients with cerebrovascular accidents who had unequivocal neurological deficit, whose heart was normal and CSF was free of blood were included in this study. All cases were subjected to detailed neurological examination on admission to hospital in order to determine the extent of neurological involvement. Every patient selected for study was administered 2,400 mg/day of Xanthinol nicotinate by intravenous infusion over an eight-hour period for three consecutive days. Subsequently he was maintained on oral Xanthinol nicotinate in a dosage of 600 mg. three times a day. Symptomatic and supportive therapy was given as required. No case on xanthinol nicotinate was given anticoagulants, other vasodilaters, low molecular weight dextran or other drugs which are considered beneficial in cerebrovascular disease. In every case the progress of the patient was recorded for three weeks. The gradation in total improvement of the patients was noted as follows :

Excellent :—where the patient regained almost full power in three weeks' time, and was able to walk without support. *Good* :—where the power regained was grade 4/5 and the patient was able to walk with support and *Poor* :—where there was only

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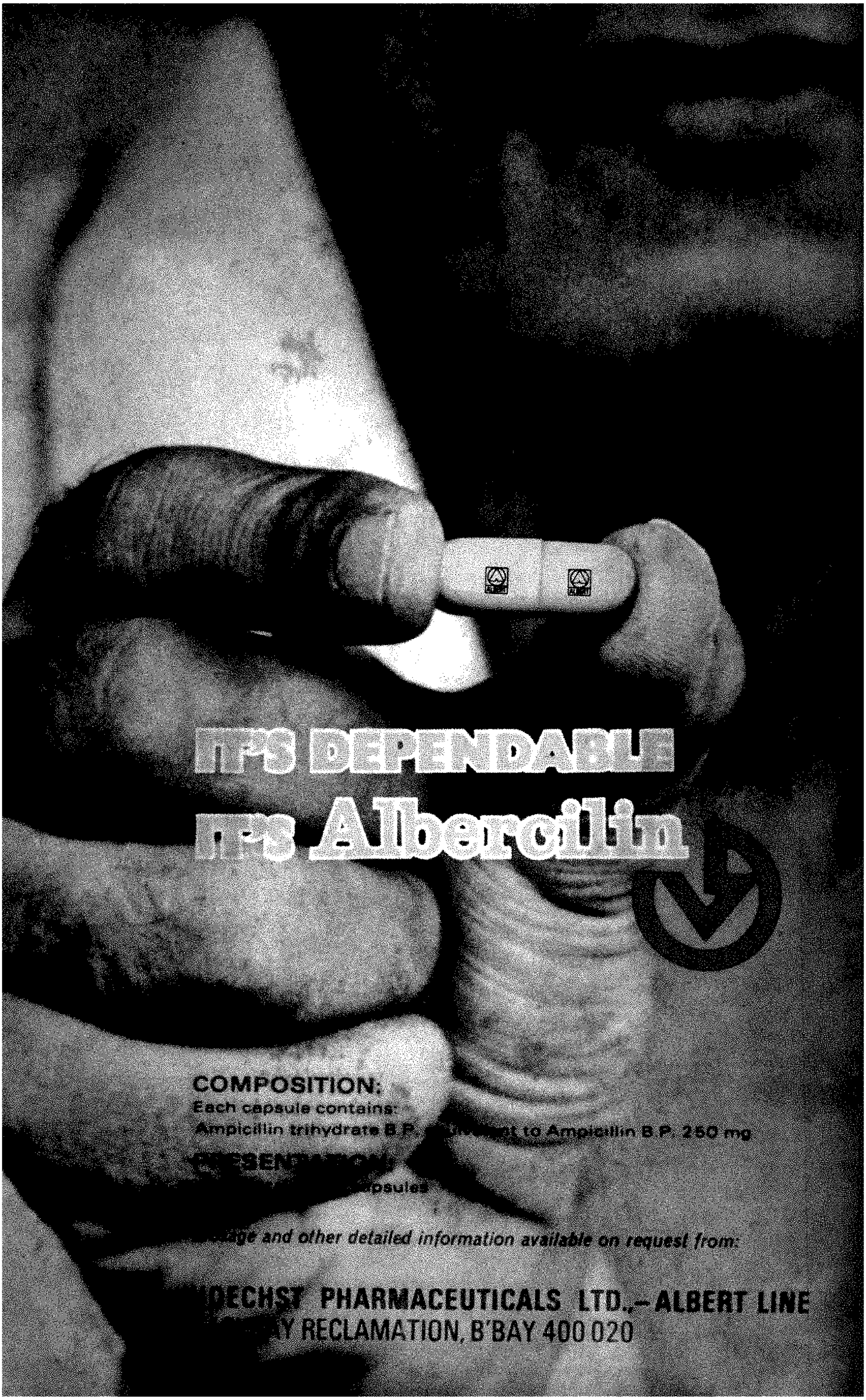
*Specially contributed to the 'ANTISEPTIC'.



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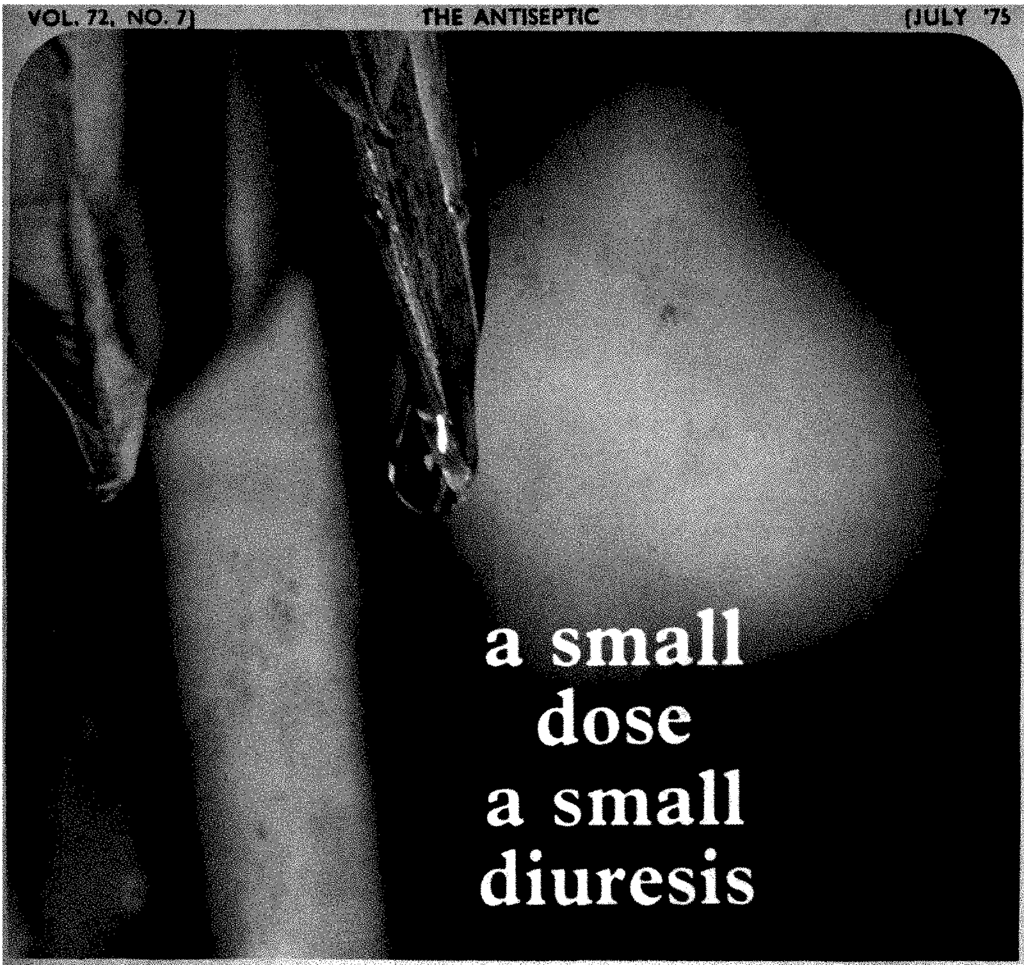

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a slight recovery and *No improvement at all*:—when neither power nor movements, were regained.

Results.—In the present study there were 42 males and eight females, whose ages ranged from 26 to 74 years; the majority however, were in the age-group of 45 to 65 years. Thirty-nine (78 per cent) patients had disease involving the internal carotid system and the rest had involvement of the vertebrobasilar system.

The results of treatment are given in Table I below.

It will be seen that the patients who were admitted within 24 hours after onset of the stroke showed better response than those who were admitted later on.

TABLE I

Showing response to Xanthinol nicotinate

Response	In patients who were admitted within 24 hours after onset of stroke (34)	In patients who were admitted later on (16)	Total No.	(50) %
Excellent	25	1	26	52
Good	7	3	10	20
Poor	1	4	5	10
No response	1	8	9	18

In all 26 (52 per cent) patients showed *excellent* recovery, 10 (20 per cent) *good* recovery, five (10 per cent) *poor* recovery and the remaining nine (18 per cent) none at all.

Side-effects and complications:—In the present study with the dosage used, no serious untoward effect was noted with this drug. Thirty-five (70 per cent) patients during the intravenous infusion complained of a feeling of warmth, this was momentary and in none was it so intense as to need the stoppage of treatment. The drug had no significant effect on blood pressure and pulse rate.

Discussion.—Xanthinol nicotinate is 7—2-hydroxy 3—N-2-hydroxyethyl—N methylamino propyl—1, 3-dimethyl Xanthine -pyridine—3-carboxylate. It has got properties both of theophylline and nicotinic acid, and causes enhanced perfusion of the microcirculation by opening up the reserve circulation (Jacoby, 1964). This effect is not generally accompanied by any lowering of the arterial tone or a fall in blood pressure. It produces a rise in stroke and minute cardiac output (Bachmann, 1965; Heim and Storck, 1961; Thiesen and Fischer, 1959).

This effect of Xanthinol nicotinate is produced possibly because of its direct effect on the heart. Thus Xanthinol nicotinate by its action both on the peripheral vessels and the heart accelerates the blood flow and hence it improves the blood supply to tissues. In addition to its action on tissue blood flow this drug also increases the fibrinolytic activity (Fischbacher

1961 and 1968; Stamm 1962; Amery *et al* 1961). Because of these pharmacological actions Xanthinol nicotinate has been used in the management of various vascular disorders with encouraging results.

Berger *et al* (1962), Kessens (1960) and Kannert (1961) found this drug useful in the management of cerebrovascular disease. In the present study of this drug on fifty patients with acute non-hæmorrhagic cerebrovascular accidents, there was excellent or good response in 36 (72 per cent) patients and poor or no response in 14 (28 per cent) of the patients. These results are comparable with those of Berger *et al* (1962) and Kessens (1960). The results with this drug were much better in patients who were admitted within 24 hours after the onset of the stroke than in those, who were admitted later. Thus as the time passes the usefulness of this drug diminishes. This may be because of the fact that with passage of time, irreversible damage has occurred to the nervous tissue.

In the present trial unlike the observation of Mc Nicol and Douglas (1965), we did not have any serious untoward effect like hypotension or abdominal pain in the patients. The only minor side-effect complained of by the majority of patients having intravenous therapy, was a felling of warmth.

It, therefore, appears that Xanthinol nicotinate is of value in the management of acute non-hæmorrhagic cerebrovascular accidents of recent onset.

Summary and Conclusions:—Xanthinol nicotinate was tried on fifty patients with nonhæmorrhagic cerebrovascular accidents admitted within 48 hours of onset of the stroke. Each case was carefully assessed before and after three weeks' treatment with this drug, and the results were graded as *Excellent*, *Good*, *Poor* and *No response*. Excellent response was observed in twenty-six, good in ten, poor in five and no response in nine patients. The results were better on those patients who were treated within 24 hours after onset of stroke than those who were treated later on. No serious side effect was observed in any of the case.

Acknowledgement—We wish and express our grateful thanks to the Principal and Controller and Superintendent, R. N. T. Medical College and attached group of hospitals for their kind permission to publish this work.

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FUNCTIONAL ENURESIS IN CHILDREN*

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INTRODUCTION :—Involuntary discharge of urine in children is the perpetuation of or a reversal to the infantile lack of control over the urinary bladder due to delay in maturation of the physiological reflex of bladder evacuation. The child acquires abnormal conditioned reflexes whereby bladder evacuation continues to occur even during sleep. It may be continuous since birth and the infant had never acquired sphincter control or control was gained and later lost. All infants are incontinent at first and gain bladder control in their 'own good time'. This time may vary because cortical maturation is slower in some than in others. According to Nelson, most children attain bladder control within 15 to 18 months and nocturnal control before 2 to 3 years of age.

Woodmansey says that enuresis may be :—(1) a result of the normal absence of cerebral control in early life (Infantile incontinence). (2) an integral part of the physiological syndrome of fear (reactive incontinence). (3) an indirect result of a specific fear of incontinence largely caused by attempts to terminate it. (paradoxical incontinence).

Delay in the bladder control may be due to.—(1) *Training* :—No reasonable part played by the parent to teach habits of toilet training to the young one, as an over-protective mother or due to too early and vigourous attempts at it leading to confusion and resentment in them.

(2) *Emotional* :—To express desire to receive care and attention from the parents or unconscious resentment in the parents. Fear of injury to the genitals associated with sexual fantasies and masturbation may be a cause.

Incidence :—(1) Twice more common in boys than in girls. (2) More in the low socio-economic groups, and in the (3) institutionalized child; (4) heavy sleepers because signals from distended bladder do not reach conciousness in time for the child to get up and pass urine.

But both enuresis and deep sleep may be determined by emotional factors.

Management :—The primary treatment is psychotherapy for the underlying neurotic problem.

Improvement with simple measures occurs in a reasonable period of time and is often dramatic.

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*Specially contributed to the 'ANTISEPTIC'.

Advice to the parents alone and to alleviate their anxiousness is very important. They should be told that shamming and nagging and punitive treatment will not help the child but may make matters worse.

At the same time, to allow the child to 'grow out of it' is useless.

An occasional older child may gain control as he becomes fearful of humiliation by friends during summer camps or visits and stays at a friend's place. But this does not mean that the basic problem is solved. It may persist and show itself in another form.

It is proposed that the bladder capacity of enuretics is less than of other children. To increase this, the intake of more fluids during day time and encouraging the child to suppress the urge to void is advocated.

Limiting fluids for hours before bed time and waking the child at night just before he wets are also helpful.

Assurances to the child that he will dry as he grows up is invaluable.

Sylvia Dische conducted a trial with 144 patients of whom 93 were boys and 51 girls of the ages between 4 and 15 years. She used the procedure of :

(1) *Simple advice to parents* :—*i. e.* no punitive treatment and to reward the child if dry.

(2) *Advice to child* :—That as he 'grows up' he will find himself dry.

She made use of weekly charts on which each child charted his dry night by a drawing next morning.

Further encouragement by appreciation of the drawing like "as predicted you are growing up fast" made the child feel comfortable and confident of becoming dry.

The child was discharged if bed wetting did not occur for 6 months.

Another type of treatment was with an electric buzzer in those above 7 years of age and with no improvement with the above method, telling him that this is a quick method to help him to dry.

The child and one of the parents had to get up as soon as the buzzer sounded which occurred when the child had just started passing urine in bed. After visiting the toilet the buzzer was switched off by the child himself.

The child if dry for 21 nights buzzer was not used any more.

But if enuresis started again even twice a week the therapy was restarted for 21 nights.

The child was discharged if dry for 6 months.

Inference:—Out of 144 patients, 126 were regular. 188 became dry, *i. e.* 93·7%.

White along with simple advice gave lactose tablets as placebos and got a high success rate within 5 to 8 months. His relapse rate was also very low.

TABLE I

Procedure	Dry patients
1. Simple advice	48
2. Buzzer	70

TABLE II

Showing results of Turner and Young's series

Procedure used	Relapse rate
1. Conditioning with dextro amphetamines	75%
2. Methyl amphetamines	43%
3, Conditioning alone	31%

The time taken to dry was much less with tablets than with the latter.

The high rate of success shows that there is no need of any treatment other than:—(1) Simple advice. (2) Buzzer. Both are considerably demanding of time and a buzzer requires good supervision.

Contradictions to the buzzer system have been raised by some. According to Woodmansey, buzzer itself is a traumatic process to the child and simple advice and the 'try harder' method is ideal.

Of course a safe and reliable drug would be useful any day.

Many drugs like Imipramine, amphetamines, belladonna are being used in daily practice.

The improvement soon after these drug administrations is dramatic but only temporary and relapse rates are high, when the drug is stopped.

Besides the side effects of these drugs are well known.

Poussaint and Dilman treated 47 children with Imipramine and 11 were dry within 2 months while Shaffer and Hill found 20/56 dry when the drug was used and only 2 continued to be dry after their stoppage.

According to Sylvia 'charting' is a very important point in successful therapy.

With 'simple advice' or 'Buzzer' no substitution symptoms were noted.

Conclusion.—Enuresis is an emotional problem to be dealt with by encouragement and sympathy by the parents, and not by nagging and punishment.

At the same time neglecting the problem will make the child gain mastery over it.

Drugs though widely used are of doubtful value because of their temporary improvement and high relapse rates, unless a safe drug is made available in future.

The family doctor or doctors in the out-patient department can treat such cases with a little bit of patience.

Encouragement to the patient and his parents is invaluable.

Advice to parents and charting will alone help most of the patients.

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ANTIBIOTICS IN THE TREATMENT OF ACUTE OSTEOMYELITIS AND ACUTE SEPTIC ARTHRITIS IN CHILDREN

A bacteriological survey of 101 patients with acute hæmatogenous osteomyelitis and of 45 patients with acute septic arthritis has been performed. In the osteomyelitis survey, the organism most frequently detected was Staphylococcus aureus (75% of cases). In 10% of cases streptococci were found. Staph aureus was also the most frequently grown organism in cases of acute septic arthritis (48·5% of cases), but hæmophilus influenzae accounted for 34% of positive cultures. On the basis of the survey, a combination of methicillin or cloxacillin and penicillin is recommended for acute hæmatogenous osteomyelitis and methicillin or cloxacillin and ampicillin for acute septic arthiritis. The best choice of antibiotics is vitally important since treatment has to commence before the results of culture are known. Repeated evaluation of trends in the pattern of organisms causing these diseases is strongly recommended.—(*Nade Sydney et al*).

THE SLEEP HABITS AND LIFESTYLE OF CIGARETTE SMOKERS

One hundred men and 119 women between the ages of 15 and 80 years who were patients in the wards of a general hospital gave subjective reports of their sleep habits, smoking status and consumption of alcohol, tea and coffee—aspects of their lifestyle when at home. Patients who usually smoked more than 20 cigarettes per day also drank more alcohol and more tea or coffee than others—Heavy smoking and the frequent drinking of tea or coffee were associated with later times of going to bed at night but not with insomnia. Alcohol consumption was unrelated to any aspect of sleep habits. These findings are consistent with the view that heavy smokers tend to be more extroverted than nonsmokers and seek arousal both by out-going social activities and by the use of stimulant drugs such as nicotine and caffeine. However, heavy smokers do not necessarily suffer from long term emotional distress which would cause insomnia.—(Johns, M. W. *The Medical Journal of Australia*, 30-11-1974).

ANAESTHETIC MANAGEMENT OF UPPER AIR-WAY OBSTRUCTION AND THE VALUE OF PRE-ANAESTHETIC DIRECT LARYNGOSCOPY AND PRE-OXYGENATION*

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UPPER air-way obstruction is a challenge to the life of a patient and the skill of an Anaesthetist. In their management merits of various anaesthetic drugs, gases and techniques have been described but in actual practice and in times of crisis not all are readily available. With what is available an anaesthetist has to plan a safe method and he must also be able to detect and manage a cardiac or respiratory arrest, if it occurs during his procedures.

In air-way obstruction,the hypercarbia stimulates increased secretion of catecholamines which maintains the circulation and blood pressure. When air-way obstruction is released, there is a sudden release of carbon dioxide which may produce hypotension and diminished circulation to vital organs. Hence preoxygenation with cent per cent oxygen is essential to prevent hypoxia to the vital organs.

Direct laryngoscopy preceded by oxygenation has been found to be a safe and valuable aid in managing upper air-way obstruction. It is better than indirect laryngoscopy. It gives an idea of the obstruction, the size, situation, mobility, consistency, bleeding tendency and secretions, also blood filling the oropharynx. The epiglottis and vocal cords can also be visualized. The possibility of an awake intubation can be known and performed if necessary. It is now our practice to administer cent per cent preoxygenation for about 5 minutes in all cases of upper air-way obstruction. Following preoxygenation, direct laryngoscopic examination is made, which often helps to study the nature of the pathology in the upper respiratory tract. We are presenting the anaesthetic management of three such cases of upper air-way obstruction to illustrate the advantages of preoxygenation and direct laryngoscopy.

CASE REPORT I:—A three days old, neo-nate, weighing 2·75 kg. with a terratoma of the palate was taken up for excision of the growth as an emergency case due to feeding difficulties. The child was unable to close its mouth and had had no feeds since birth.

The growth was irregular in shape and occupied the oral cavity and also extended outside the mouth. The growth prevented the child from closing its mouth. The consistency was cystic in some places and firm in others. It arose from the right half of the soft palate with a pedicle and was mobile. There was no extension into the naso-pharynx.

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* Specially contributed to the 'ANTISEPTIC';

On direct laryngoscopic examination after preoxygenation, with a straight infant blade passed over the tongue, the deeper portion of the growth and oropharynx were visualised. There was no extension of the growth into the oropharynx. The tumour was compressed into the palatal depression and the straight blade was advanced between the growth and the tongue until the epiglottis was visible. With some difficulty, an awake intubation with a 00 Magills tube was successfully made and anaesthesia was induced and maintained with nitrousoxide, oxygen and di-ethyl ether. No anaesthetic or air-way difficulty was noticed during surgery. The post-operative period was uneventful. The baby was discharged on the 8th post-operative day, taking normal feeds.

TERATOMA. PALATE

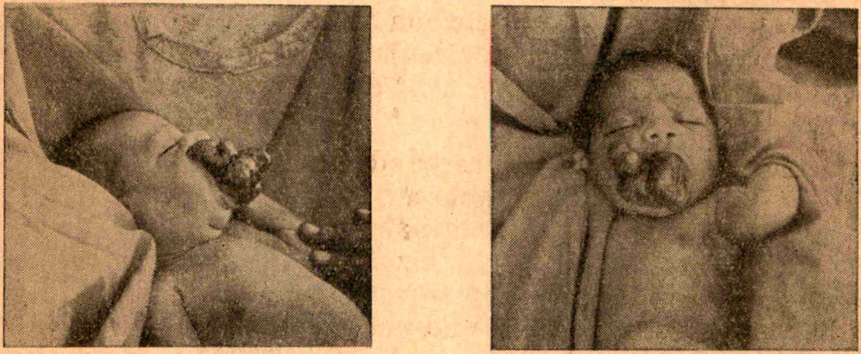

FIG. I. FIG. II.

CASE REPORT II :—R.S., a boy aged 2 years was brought to the theatre in a state of respiratory distress but not cyanosed. He had accidentally swallowed a whistle which was lying transversely in his oropharynx. Whistling sounds were heard on respiration and skiagram showed the foreign body in the oropharynx.

After preoxygenation direct laryngoscopy confirmed the whistle lying transversely in the oropharynx. The tip of the laryngoscope blade could not be advanced forward and the vallecula could not be reached. The epiglottis and vocal cords were not visualized. The child was able to maintain respiration by the sides and through the central hole of the whistle. The endotracheal tube could not be passed. When tried to pick it up, the cylindrical body slipped. Hence, the broader base was pushed down. This tilted the whistle and the exposed edge was now caught with a pair of forceps. With careful negotiation, the broader base was taken out of the oropharynx from below the soft palate without any injury to the adjoining structures. Post-operatively the boy was put on antibiotics and steroids. There was no laryngeal œdema and he became completely all right on the next day.

CASE REPORT III :—A girl aged 4 years had multiple papillomatous masses in the larynx arising from the anterior commissure and ventricular bands. They were obstructing the air-way and causing dyspnœa.

F. B. WHISTLE

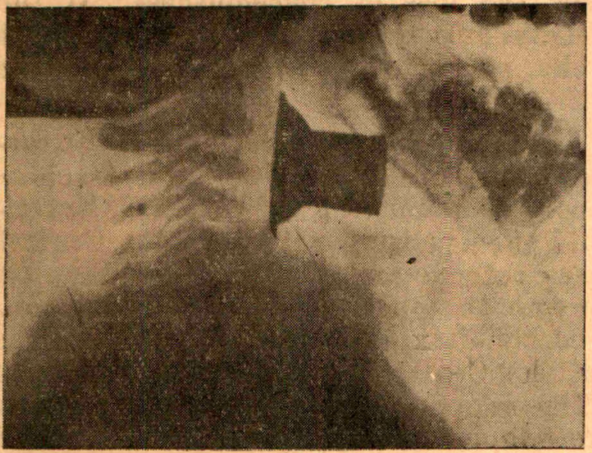

FIG. III

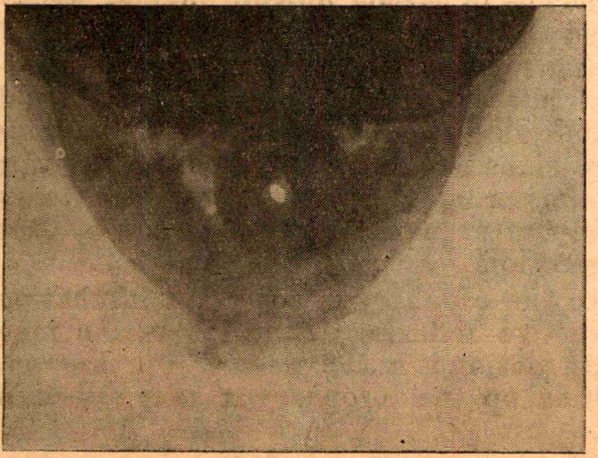

FIG. IV

After pre-oxygenation direct laryngoscopy was performed and the pedunculated masses were seen moving up and down during respiration when the child started struggling during examination they started bleeding. Due to the bleeding and narrow space a tube could not be passed. The child was administered nitrous oxide oxygen in equal proportions and Trichlorethyleneto prevent her. struggling Under local anæsthesia tracheostomy was performed. Apnœa occurred for a few seconds with no hypotension. Anæsthesia was maintained through the tracheostomy with an endotracheal tube until all the masses were removed from above.

Discussion :—Anæsthesia in the presence of upper air-way obstruction requires skill and foresight in selecting the proper anaesthetic drug and technique. Drugs such as thiopentone will increase the reflex activity in the glottis area and depress both respiration and circulation. Thiopentone and short acting relaxant should be used alone when the lungs could be inflated during the period of apnœa. This should not be used where intermittent positive pressure may be impossible due to ball-valve action or due to the presence of foreign material (Wylie, 1966). Blood, secretions and vomitus in the oropharynx may create additional problems to the anaesthetist, if they are not properly sucked out.

General anæsthesia may depress the respiration by affecting the activity of the accessory muscles of respiration which enable a partially obstructed patient to get air into his lungs. Fatal hypoxia may follow the loss of consciousness. If the respiration stops after general anæsthesia the anæsthetist must be able to ventilate the patient by intermittent positive pressure.

If a tracheostomy is done for upper airway obstruction, the sudden release of carbon dioxide after tracheostomy may result in post-hypercœpneic hypotension. Carbon-dioxide has a divergent effect (Price, 1960). The Central stimulating effect releases catecholamines and the direct on the peripheral vascular smooth muscles causes vasodilation. The rapid removal of corbon-dioxide from the blood after tracheostomy will affect the Central Function first, due to its greater blood supply. The unopposed peripheral vasodilation results in a progressive development of hypotension. In order to retard the rapid wash-out of carbon dioxide an elongated tube should be attached to the tracheostomy to increase the dead space and retard the loss of carbon dioxide (James Erickson 1964). The administration of anæsthesia during this period will produce further peripheral vasodilation leading to catastrophic hypotension and circulatory arrest. The patient should be allowed to "rest" following the establishment of improved air-way and his vital signs should be watched closely for some time before administering anæsthesia. Tracheostomy should also be done only after improving the hypoxia by cent per cent oxygen administration.

Local anaesthesia to the oropharynx for blind intubation may depress the protective reflexes. Blind intubation may also be difficult if the obstruction is in the naso-or oropharynx. Blood or secretions filling up the oropharynx may block a blindly intubating tube.

Hence in treating upper respiratory obstruction a clear knowledge of the oropharynx and oral cavity is essential before planning a safe method of anæsthesia. A direct laryngoscopic examination preceded by oxygenation may be both a safe and informative priliminary for selecting the proper anæsthetic technique. Intubation can also be done and anæsthesia induced with intravenous drugs. If intubation is not possible tracheostomy can be done and anæsthesia induced through the tracheostomy with an endotracheal tube. Occasionally an anæsthetist himself may be able to remove the obstructing foreign body himself after laryngoscopy.

Conclusion.—Pre-anæsthetic direct laryngoscopy preceded by oxygenatien is a valuable aid in the anæsthetic management of upper air-way obstruction.

Summary.—In the anæsthetic management of upper air-way obstruction the value of direct laryngoscopy preceded by oxygenation is informative to plan a safe method. Three cases of upper air-way obstruction and how they were managed have been described.

Acknowledgement.—My grateful thanks are due to the Director of Medical Education, Tamil Nadu and Dr. B. Subbiah, M.D., D.C.H., Superintendent, Tirunelveli Medical College Hospital, Tirunelveli and Dr. P. Natarajan, M.D., Principal, Tirunelveli Medical College, Tirunelveli for permitting me to report this case.

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CANCER OF THE BREAST: FORWARD LOOK IN THE 1970s

Newer Diagnostic Methods:—The frequent craggy consistency of a breast cancer usually makes it relatively easily palpable, even when it is small in size. However, in large breasts or in deeply seated tumours this may not be so, but I would define 'early cancer' as one in which, even with the most careful palpation, no mass can be felt in the breast.

Iconoclasts have been questioned the value of early diagnosis in influencing the outcome of treatment of breast cancer, but the five-year follow-up figures from the Health Insurance Plan survey in New York (Strax *et al* 1970) surely convince one of the value of early diagnosis.

Methods of detecting breast tumours are therefore important. I confine my remarks to mammography, xerography and thermography.

Mammography:—Any diagnostic method for use in clinical practice should meet at least the following criteria: accuracy, safety economic feasibility.

Is the method accurate? The percentage of accuracy for mammography in the diagnosis of breast cancer has been claimed to be from 70% to 92% but I do not propose to go into detail on these figures, for they depend on the age of the group examined. Our own figures in patients over the age of 40 years suggest an accuracy of 92%. Since the commoner and universally accepted X-ray examinations such as barium meal have a similar level of accurasy, and even sophisticated neurological diagnosis dealing with a relatively restricted field seldom has an accuracy rate of more than 92% (Di Chiro 1962), it would seem that mammography is acceptable as a diagnostic screening procedure.

Is it safe ? It has been claimed by some epidemiologists that when mammography is used in survey work radiation-induced cancers of the breast may exceed the number of early cases of breast cancer uncovered. It is well to examine critically the evidence on which this alarming statements is based.

Mackenzie (1965) found an increased incidence of breast cancer in patients who had had fluoroscopy repeated over many years for control of artificial pneumothorax induced for the treatment of pulmonary tuberculosis. Myrden and Hiltz (1969), examining virtually the same group of patients found, on comparison with another group of tuberculosis patients who had no such fluoroscopy, that there was a significantly greater frequency of breast cancer. Metther *et al.* (1969) showed that patients who received radiation for postpartum mastitis had an increased incidence of breast cancer developing fifteen years later.

The most recent evidence incriminating radiation is reported by the United Nations Scientific Committee on the effects of Atomic Radiation (1972), based on the work of Wanebo *et al.* (1968), who found an increased incidence of breast cancer in patients who had received irradiation from the atomic explosions. The estimated dosage to the breast varied from 60 to 400 rad, depending on distance from the epicentre of the explosion, the average dose being of the order of 100-200 rad.

If would thus appear that malignant change is unlikely to develop until 15 years after the carcinogenic dose has been reached. Bearing in mind the dose levels in mammography in would appear that twenty years would elapse before this radiation dose were reached, so that the possibility of development of a tumour might be anticipated in a further fifteen years, *i. e.* 35 years after the first examination.—(Prof. Eric Samuel, *proc, roy, soc, medical* 4-4-74.)

SULPHONAMIDES IN PREGNANCY

A woman who is taking half a tablet of Septrin (Sulphamethoxazole 400 mg ; trimethoprim 80 mg) daily on a regular basis for chromic cystitis wishes to have a baby. Is there any reason why she should not continue with this therapy during pregnancy ?

Sulphonamides should not be given to pregnancy women. These are known to be associated with an increase of jaundice in the newborn. Kernicterus may also occur with its potential for causing mental changes in the child. sulphonamide competes with bilirubin for protein binding sites in the plasma and this allows a rise in free serum bilirubin which can then settle into the tissue paoteins of the basal ganglia. In this patient it might be possible to stop the sulphonamides and repeatedly monitor the urine for bactorial infection throughout pregnancy, treating her only when there is definite infection. Ampicillin might be the antibiotic of choice and possibly nitrofurantion. Symptoms of frequency and dysuria are not a reliable guide to the presence of infection which might exist when these symptoms are absent. Furthermore, symptoms might be present when there is no infection. Only bacteriological proof is reliable and it might be wise to collected specimens by supprapublic aspiration,—(*British Medical Journal*, 13-4-1974).

ERYTHROMELALGIA IN THE YOUNG

(A review with two case reports)

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ERYTHROMELALGIA *Syn*—Erythermalgia, Erythralgia, and Weir-Mitchell's disease.

The term erythromelalgia denotes red and painful extremities. (*Erythros,* Red; *Melos,* Limb; *Algos,* Pain). Smith Allen suggested the term 'Erythermalgia' which emphasises the additional outstanding feature of increase in temperature in the affected parts which would be described by the Greek word '*Therme*'

Historical data.—It was first described in 1834 by Graves. In 1872 Mitchell reviewed the case and inspite of his contributions little notice was taken of Erythromelalgia in the medical literature until Cassirer in 1912 summarized the condition. In 1924 May and Hillmand added some significant data based on their studies. Since then only a few reports of importance have been published.

Aetiology :—Little is known of the ætiology of this disorder.

1. *Primary or idiopathic type* :—Essentially a vascular disease but the exact cause is not known.

2 *Secondary type* :—Associated with polycythemia vera, thrombocythemia, occlusive peripheral vascular disorders, hypertension, arteriosclerosis obliterans, poisioning by heavy metals, alcoholism, gout, angioneuretic œdema, etc. May also occur after the use of Thalium as a depilatory or as nutritional Erythromelalgia (*Syn* : Burning feet syndrome). Occasionally the disease may be associated with Bence-Jones albuminuria.

Older hypothesis :—Associated with dysfunction of the nervous system and may be seen in cases of peripheral neuritis, Graves disease, locomotor ataxia, multiple sclerosis, alcoholism, osteomalacia and myelitis.

Pathology :—No constant pathological change has been found. The primary erythromelalgia is probably a functional vascular disorder. Vasodilatation is the basis-William Boyd. It may be due to a disorder of the sympathetic nervous system.

Physiology :—Lewis found that the essential abnormality is a hyper-sensitive state of the cutaneous pain fibres to heat or tension. He suggested that in erythralgia and in certain types of cutaneous injury a chemical substance liberated in the skin acts as the immediate stimulus to the nerve endings.

The pain which follows repeated rubbing or stretching of normal or erythralgic skin is prolonged and intensified by arresting the circulation to the part gives support to this concept. (A sphygmomanometer cuff may be used for this-purpose).

Clinical features:—It occurs most frequently in middle age and is rare in children. Sex-incidence is equal. The condition is characterized by a paroxysmal throbbing or burning pain usually in the feet sometimes in the hands, accompanied by redness and local elevation of the cutaneous temperature of the affected parts. The attacks last for a few minutes or for even a few hours.

The 'critical temperature' at which the distress can be produced varies with different persons in different parts of the extremity of the same person. The critical temperature lies in the range from 32° to 36° C.

Bounding pulse, distended veins, throbbing of the part, hyperhidrosis and slight pittingœdema of the affected parts may be present in some cases. In extreme cases wasting of the muscles of the limbs due to disuse atrophy may be seen.

In the secondary type, the clinical picture varies according to the associated diseases:—nutritional erythromelalgia is usually associated with glossitis and cheilitis.

Exercise, exposure to heat and erect posture tends to induce erythromelalgia. Rest, elevation of the part and application of cold tends to relieve this condition.

Raynaud's disease:—Thromboangiitis obliterans and Acrocyanosis may be considered for differential diagnosis.

Prognosis:—In the primary type prognosis is good, as the disease is not fatal. But recurrent episodes of burning distress may occur. If secondary to other diseases prognosis is poor.

TREATMENT:— 1. *Prophylactic measures*:—To avoid the precipitating factors such as exercise, exposure to heat and erect posture.

2. *Primary type*:—Small doses of Aspirin (5 gr. to 10 gr.) give dramatic relief. This effect is not yet explained. Rest and elevation of the parts during the attack, and immersion in cold water give relief. In fact, many patients with erythromelalgia dip their affected parts in cold water to get relief. Hence, maceration and superadded fungal infection may occur.

A cooling application such as menthol in alcoholic solution or an ointment may alleviate the pain temporarily. The use of perforated shoes, injection (or) inhalation of Ephedrine chloride, nerve stretching and nerve excision, and X-ray therapy have also been suggested.

Secondary type:—Simultaneous treatment for the associated diseases is needed in the secondary type. In nutritional Erythromelalgia the administration of a full diet with vitamin B complex, Pantothenic acid and yeast have been reported to give good results.

Relief may be obtained by Methysergide (Deseril) 2 mg. tab. taken *t.d.s.* This has an anti-serotonin action but there is no evidence of over-production of serotonin in this disease.

CASE REPORTS :—*Case I* :—S. R., a 13-year old girl was admitted on 20-5-69 with intermittent burning sensation and pain in the hands of 1½ years' duration. She used to get relief from the pain by dipping the hands in water or by wetting them with saliva (*see* Fig. I). She was very anæmic and she had angular stomatitis, glossitis and smooth tongue. Her palms were reddish and swollen with slight scaling over the surface. Paronychia and absence of some of the finger nails were also present.

Her hands were warm to the touch and there was a considerable rise in temperature of the affected parts during the attacks. Unfortunately we were unable to measure the critical temperature accurately as a skin thermometer was not available.

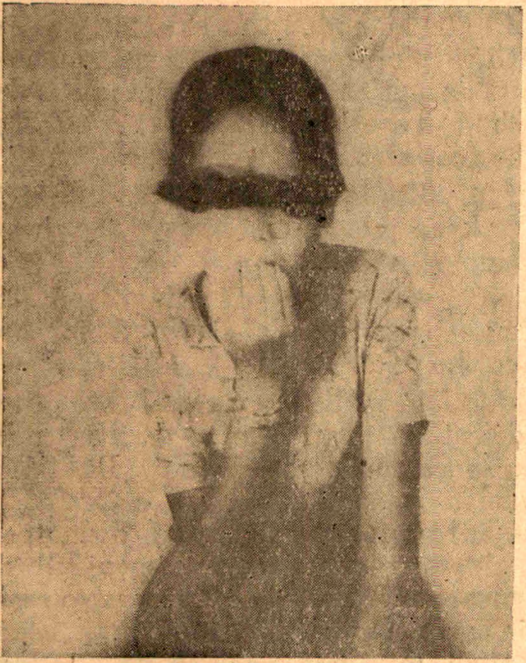

FIG. I:—CASE I. Shews the sodden appearance of the hand and the habit of putting the hands in the mouth for cooling them with the Saliva.

Her general condition improved with Fersolate and multivitamin tablets. She was started on Aspirin 10 grs. after food daily for seven days. The burning sensation completely disappeared and aspirin was discontinued.

She was referred to the child-guidance clinic for opinion regarding her habit of wetting the fingers with salive and dipping her hands in cold water. The report given by the Child Guidance Clinic revealed that her *I. Q.* was 95 and there was no psychological deficit. Her behaviour was found to be a method of getting relief from the uncomfortable burning sensation in the hands. A few sessions of psychotherapy were also suggested.

Even before starting psychotherapy the burning sensation was completely relieved. She had stopped dipping the hands in water but continued to wet her fingers with saliva as a habit. Two sessions of psychotherapy were given. She was discharged on 23-6-69. On discharge there was no redness or burning sensation. But a slight warmth was persisting. Review of the case in January 1970 has revealed that she was completely relieved of her signs and symptoms when her general nutritional status had considerably improved.

Case II:—T. a 12-year old girl attended the skin out-patient department on 24-2-1969 with a picture similar to that mentioned in the previous case report except the features of glossitis and angular stomatitis. She had hyperhidrosis of the affected parts and involvement of the feet also.

In addition to the habit of dipping her hands and feet in water frequently she used to keep her arms above the head. Here I would like to quote the instance.......

'Sutton saw a patient whose disorder involved the palms who would sometimes keep his hands elevated for half an hour or longer to alleviate the pain'.

Fersolate tablets and injections of liver extract were given to improve her general condition, Aspirin 5 gr. *b d*, was given for about 18 days. Burning sensation was relieved. But minimal redness and slight warmth persisted. After a few days she again complained of the burning sensation and once again treatment with aspirin was given for about one month till the disappearance of burning sensation. This child was also referred to Child Guidance Clinic and nothing abnormal was reported. She was discharged with minimal warmth and redness over the affected parts. Follow-up revealed that she was completely free of her signs and symptoms about a year later.

Conclusion.—Erythromelalgia commonly occurs in middle age, but is rare in children. As we saw two cases in the younger age group (12 and 13 year old girls) they have been reported. One was diagnosed as 'Nutritional Erythromelalgia' and the other as 'Primary (or) Idiopathic Erythromelalgia.'

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CONTROLLED TRIAL OF VARIOUS ANTI-D DOSAGES IN SUPPRESSION OF *Rh* SENSITIZATION FOLLOWING PREGNANCY

By the beginning of 1966 evidence was growing that *Rh* sensitization which would otherwise follow pregnancy in a proportion of D-negative women could probably be prevented by giving the mother an injection anti-D immediately after delivery, though it was realized that the effectiveness of the treatment could not be properly assessed until the outcome of second pregnancies with D-positive infants was known—Clarke, 1967.

In the United Kingdom and in a few other countries a dose of 100mg anti-D has for sometime been used for routine administration to unimmunized D-negative women recently delivered of a D-positive infant. Our results support the contention that this dose has a success rate which is not appreciably different from that observed with a dose of 200-300 mg. Whatever standard dose is adopted it is desirable to perform a screening test to detect large transplacental hæmorrhages because it is likely that in such cases the risk of *Rh* immunization can be reduced by giving an appropriately increased dose of anti-D

In a controlled trial phials containing 200 mg 100 mg 50 mg or 20 mg of IgG anti-D were given to nearly 2,000 D negative primiparæ whose infants were D-positive and ABO compatible. Only mothers whose serum lacked anti-D were included and the dose of anti-D was always given within 36 hours of delivery. Each phial contained the same total volume of immunoglobulin and the particular dose given to any patient was not known to the clinician. The anti-D content of the phials was estimated three times during the course of the trials and remained faily constant. Six months after delivery the incidence of a positive indirect antiglobulin test result, indicating the presence of anti-D in the four dose groups (with about 450 women in each group) was as follows: 22%, 0·23% 0·44% and 1·35%. The trend towards an increase in the frequency of failures as the dose decreases was significant at the level of P=0·02%.

In each dose group about 200 women were followed to the end of a second pregnancy with a D positive infant. The failure rate (in order of decreasing dosage) as judged by a positive indirect antiglobulin test result at the second delivery were as follows : 1·5%, 1·1%, 1·5% and 2·9%. The differences between the dose groups were not statistically significant. The overall failure rate (1·7%) was about one tenth of that expected in an untreated series. Though the results failed to prove any differences in success rates between doses of 200, 100, 50 and 20mg. of anti-D, they do suggest in conformity with other evidence, that a dose of 20 mg is suboptimal for routine use. The results support the belief that a dose of 100mg is adequate.—(*Brit. Med. Jour.*, 13-4-1974).

A CASE OF NUTRITIONAL NEUROPATHY

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INTRODUCTION :—Neurological disorders have long been known to occur in association with nutritional deficiencies, especially in the tropics. The deficiencies are more often multiple than single. To these are added the often unidentified toxic factors, usually derived from the diet, their nature being peculiar to the region concerned The clinical picture, sometimes classical is more often individualistic. Spilane has recently drawn attention to much of these tropical variations in neurological disorders. We report here one such case of neuropathy, with some interesting feature, most likely to be of nutritional ætiology.

CASE REPORT :—Mr. K. R., aged 55 years, was admitted on 19th June with a history of inablity to use both of his lower extremities for the previous two months. The onset was gradual, starting with unsteadiness of both lower extremities, and the onset was gradual, starting with unsteadiness of both lower extremities and the course steadily progressed till date. The unsteadiness was followed by weakness of the lower extremities and hoarseness of voice, ending in a total disability to move about since a fortnight.

Examination revealed an emaciated anæmic patient with a dry scaly skin and Bitot's spots. There was a gross diminution of visual acuity and primary optic atrophy in the right eye. The left eye was phthisical following cataract surgery. There was bilateral nerve deafness. Restriction of movements of the vocal cords on both sides, (more on the left) with no focal lesion to account for it was attributed to neuropathy involving the recurrent laryngeal nerves. The audiogram confirmed the auditory nerve damage.

Power was grossly diminished (Grade II) in all groups of muscles in the lower limbs. There was no appreciable change in the tone. Superficial abdominal reflexes were brisk over all the four quadrants. The plantar responses were extensor on both sides. Quadriceps and Tendo-Achilles reflexes were exaggerated in both of his lower extremities. There was obvious ankle clonus on both sides. Sensory examination showed hypoalgesia and hypoæsthesia and loss of posterior column sensations over both lower extremities. Visceral reflexes were normal.

Routine investigations were initiated. His urine analysis and white-cell counts were normal. The Hb was 9·G %, red cell count 3 8 million/c. mm., and packed cells 26%, with an 1% reticulocyte count and a normocytic peripheral smear. The marrow from more than one site did not reveal a megaloblastic reaction. Histamine-fast fractional test meal, done twice, did not reveal any free-acid at all. The cerebrospinal fluid was normal but for an isolated rise in protein (158 mg%). The blood and CSF, VDRL tests were negative on two successive occasions.

Discussion.—The picture of posterior and pyramidal column involvement of the spinal cord associated with signs of peripheral neuropathy in the presence of anæmia and histamine-fast achlorhydria is typical of subacute combined degeneration of the cord complicating pernicious anæmia. But the peripheral blood-picture was normocytic and the marrow did not show any megaloblastic reaction. He also had optic atrophy, bilateral nerve deafness and bilateral recurrent laryngeal nerve paralysis due to peripheral neuropathy. The CSF protein was raised. These conflicting and confusing constellation of signs present difficulties in arriving at a precise diagnosis. It is unlikely that this patient presenting in the early days of his illness with anæmia and peripheral neuropathy due to pernicious anaemia with early neurological involvement, was given polypharmacy with iron, Vit. B-12, Folic acid, etc, the blood and marrow pictures having become completely altered. Or was it a multifactorial nutritional deficiency exhibiting a normoblastic normocytic anæmia peripheral neuropathy, involving the second, eighth, and the tenth cranial nerves also and subacute combined degeneration of the cord, with the presence of histamine—fast achlorhydria as a fortuitous combination? The lack of facilities to assess the exact extent of deficiences of Vit. B-12 or/and Folic acid by precise methods of assay precludes a definite diagnosis. The poor response to treatment with Vit. B-12 in therapeutic doses, of both the anæmia and the neurological condition and the progressive deterioration of his neurological status with bladder and bowel incontinence in the later stages. further confuses the issue.

We are reporting this case in detail because of the observed conflicting features:—severe anaemia which, on analysis is normoblastic normocytic, histamine-fast achlorhydria, subacute combined degeneration of the cord, peripheral neuropathy, signs of involvement of II nerve, VIII nerve and recurrent laryngeal nerves and a raised CSF protein and the rapidly progressive deterioration of his neurological status.

Acknowledgement.—We wish to offer our grateful thanks to the Superintendent, Tirunelveli Medical College Hospital, for according permission to make use of the hospital records and to the Principal, Tirunelveli Medical College for giving us permission to publish this paper.

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DANGERS OF OXYTOCIN-INDUCED LABOUR TO FETUSES

Summary.—A retrospective survey of 658 consecutive deliveries in Aberdeen Maternity Hospital in 1970 showed that fetal distress, low Apgar score at five minutes, and special nursery admission were all common in patients receiving oxytocin infusion. Many patients receiving such infusions also had very frequent contractions when compared with others. Though the populations in each group were not standard the clinical criteria were crude, and the survey was retrospective there are resonable grounds to believe that the present enthusiasm for oxytocin has perhaps led us in clinical practice to under-estimate and forget the dangers of oxytocin to the fetus. Careful monitoring of the fetus of the mother receiving oxytocin is essential.

The use of oxytocin is now widespread in obstetrics, and it is particularly useful for induction of labour and shortening the induction-delivery interval (Bradford and Gordon, 1968; Turnbull and Anderson, 1968). Great enthusiasm has developed recently for so-called "accelerated labour" (O'Driscoll *et al.*, 1969; Tacchi, 1971), but oxytocin has its dangers and in the present enthusiasm these tend to be forgotten (Baird, 1971). Kubli Ruttgers (1971) point out the hazard to the fetus succinctly in a chapter called "Iatrogenic Fetal Hypoxia". In an effort to identify and emphasize the problem our retrospective study was conceived.—(W. A. Liston, A. J. Campbell, *British Medical Journal*, 1974, 3, 606-607).

VASODILATORS IN THE TREATMENT OF HYPERTENSION

Vasodilator drugs play an important role in the treatment of hypertension. A powerful vasodilator such as diazoxide may be necessary in the control of the most severely affected patients. It should not be forgotten that drugs of the benzothiadiazine group probably act mainly as vasodilators and that their effect is not dependent upon natriuresis and diuresis. New vasodilators such as minoxidil may have an important role in the treatment of hypertension but these have yet been adequately assessed in Australia. Both hydrallazine and prazosin produce a significant fall in the blood-pressure when added to a combination of a beta blocker and a diuretic, and double-blind studies have shown that the side effects are more predominant with hydrallazine than with prazosin.—(Priscilla kincaid-smith, *Medical Journal*, Aust. Special Suppl., 4-1-1975).

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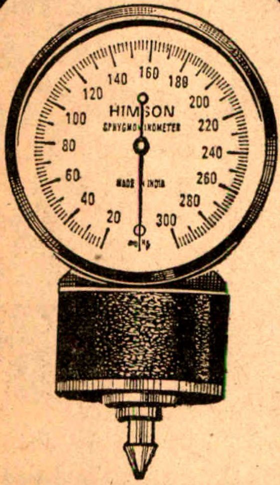

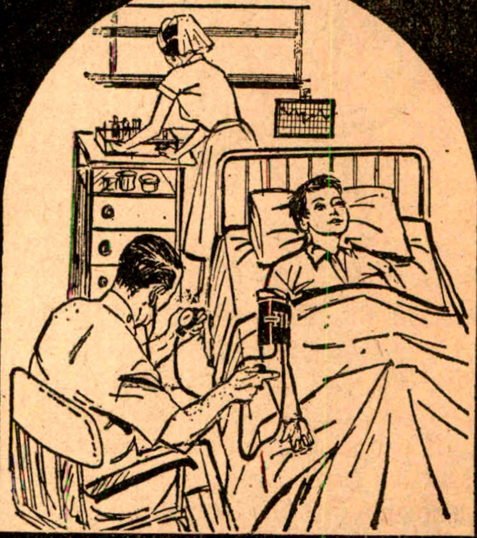

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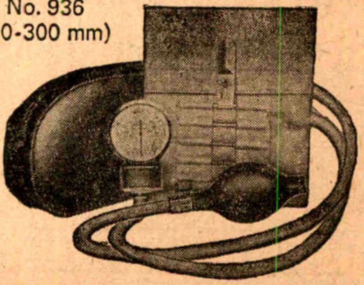

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The Antiseptic

Vol. 72 | JULY 1975 | No. 7

Editorial

U.K'S BAN ON REGISTRATION OF QUALIFIED INDIAN DOCTORS

Facts proverbially are stubborn things which must be faced squarely and bravely. The reaction in India to the recent decision of the General Medical Council of the United Kingdom to insist on the possession by Indian doctors who wish to go and practise in U. K., of a more strict linguistic competence and of their undergoing a test to prove it, has been resented. The Indian Medical Council which is the Custodian of the Standards of Medical Education in India, feels piqued, at the question as its dignity is involved. The GMC was hitherto satisfied with the word of the IMC for the right quality of its product but has now changed its attitude and imposed conditions which in reality would mean the doctor who wants to practise in England must undergo a test to prove his knowledge of English and of Medicine to the satisfaction of the G.M.C. of U.K. The Indian Medical Council accuses its British Counterpart of a breach of faith and a Union Dy. Minister of Health at Delhi characterises the act of the G. M. C. as casting an unwarranted aspersion on the Standard of Medical Education in India.

A little calm thinking alone is required to realize that the standard of medical education has greatly deteriorated—due to various reasons during recent years and that there is no use blaming the G. M. C. of U. K. Certain unmistakeable facts have been and are being overlooked or lost sight of. India is producing now many more doctors than it can employ remuneratively or absorb in Government or quasi Government institutions; futher the manner in which numerous medical colleges have mushroomed into existence but lack all the required facilities is yet another important point to note and remedy: for example of the 20 medical colleges still to be recognized by the Indian Medical Council, we know that atleast six have been started without any hospital facilities—the most important factor for proper clinical training of the students.

In most medical colleges, the number of students is far in excess of the norms prescribed. The Indian Medical Council itself feels helpless in this regard. It can only recommend derecognition to the Government but it is for the Governments to act; but Governments have to consider various other factors, and often politics have also entered into the picture. Now that the ban has been proclaimed by the G.M.C. on the registration of Indian Medicoes in U.K. we have no option but to press our Indian Medical Council to act promptly without any hesitation or second thoughts. Governments must be informed that we have delayed too long relying on the British Medical Council's continued help.

The standard of education, the procedures for admission of students with the necessary qualification, aptitude and talent, and the appointing of suitable medical teachers who have a *flair* for imparting proper instruction to prospective doctors are among the most important essentials at the present juncture.

———

MANAGEMENT OF NON-SEASONAL RHINITIS

Extrinsic type.—This type is due to animal danders, orris root in cosmetics, pyrethrum in insect sprays, house dust, cottonseed in fertilizers, or foods, flaxeed, flour, and various drugs which should be eliminated by skin tests. Sometimes foods such as eggs, wheat, milk, chocolate, fish and pork may cause allergic rhinitis. Barbiturates, aspirin, tranquilizers, and other drugs produce allergic rhinitis in susceptible persons.

Some patients just won't complete the full course of prescribed oral therapy. This is becoming an all too common occurrence. Especially in strep pharyngitis when patients can be asymptomatic after only 5 days.

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BACTERIOLOGY OF INTRA-ABDOMINAL INFECTION

Prospective bacteriological studies were done of intra-abdominal infections in 64 patients. Special techniques for isolating anaerobic bacteria were employed along with standard microbiological methods. Infections included generalized peritonitis, intraperitoneal and retroperitoneal abscesses, and abscesses of the liver, spleen, and pancreas. Specimens commonly contained multiple organisms (average, 3 8 per infection). Anaerobic bacteria were isolated most frequently (81%) of cases) and multiple anaerobes were the only organisms found in 38% of cases Bacteroides fragilis was the most frequent isolate. The remaining faculative anaerobes and aerobes were Gramnegative bacilli and streptococcus species. Antimicrobial therapy for intra abdominal infections should be directed at anaerobic bacteria, particularly B fragilis, as the faculatative and aerebic organisms that are sensitive to the penicillins, cephalosporins, and aminoglycoside antibiotics.—(R. M. Swenson *et al*, *J.A.M.A.*, Sept. 16, 1974.)

GLEANINGS

MEDICINE AND THERAPEUTICS

Alcoholic Cardiomyopathy. — (*Brit. Med. Jour.* 28-12-1974).

It may seem surprising that the role of alcohol in the genesis of chronic heart muscle disorder is still in any dispute. but the reasons for the continuing uncertainty can be stated simply. There are more drinkers than abstainers in our society, and those who drink excessively are notoriously untruthful about their alcohol intake. The clinical and pathological features of cardiomyopathy attributed to an excessive alcohol intake do not differ in any discernible way from the features of dilated (congestive) cardiomyopathy in professed non-drinkers.

Alcohol is a myocardial depressant when administered acutely, and this effect is not in question. Other drugs such as barbiturates also cause demonstrable myocardial depression when given in this way but have not been incriminated as causes of cardiomyopathy. If the heart is already ailing from any cause then the action of a myocardial depressant is hardly likely to be beneficial. If a patient with heart muscle failure (dilated cardiomyopathy) is also an alcoholic then further depression of myocardial activity could result from the alcohol, but this in itself would not constitute proof of an alcoholic origin for the heart disease. Equally, any improvement which followed abstinence from alcohol would not afford proof of cause and effect. Conversely, even if alcohol were in truth the causal agent of the cardiac disorder, then persistence of abnormality after withdrawal of the alcohol might be expected because the myocardial damage, left ventricular dilatation, and functional failure might be irreversible. A further problem is that full-blown cardiomyopathy is uncommon in alcoholic patients with cirrhosis of the liver; this suggests that alcohol may be no more than a conditioning agent acting on an already sick and susceptible end-organ. Animal studies have not fully elucidated the problem, and the biochemical mechanism through which alcohol might produce a cardiomyopathy remains completely unknown.

Finally, a cardiomyopathy possibly induced by alcohol should not be confused with cardiomyopathy caused by two known associations of alcoholism, though both are rare and the second one probably now extinct. Alcoholism is now a days uncommonly associated with nutritional deficiency, but when this occurs inadequate Vit. B_1, in the diet can lead to heart failure. In this wet beri-beri there is fluid retention and cardiac dilatation but a high output state. The hyperkinetic heart failure responds quickly to Vit B_1 and is haemodynamically and clinically totally different from the hypokinetic low output state and poor contractile function of congestive cardiomyopathy. A different cause of heart failure was the addition of cobalt to beers to improve the stability of the 'head'. This was shown some years ago to be responsible for heart failure and death in men who had habitually drunk several gallons of beer daily. The addition of cobalt to beer has now been banned, and this form of heart failure is unlikely to recur.

Despite the doubt whether it is an entity, alcoholic cardiomyopathy is a widely accepted clinical concept, and the subject has been well reviewed by Regan. In a recent study of patients with cardiomyopathy associated with a high alcohol intake, Demakis and his colleagues from Chicago looked at the natural course of 57 patients followed for an average of 40·5 months. Their progress was related to the persistence or not of the excessive alcohol consumption. Fifteen (26%) improved - and 11 of these patients had abstained from alcohol but four had continued to drink. In twelve there had been no change and thirty (53%) had deteriorated, but only four of these had abstained from alcohol. Twenty-four (42%) of the patients died. The small group of patients that improved had an average duration of symptoms of only 4·2 months at the start of the study compared with 17 and 11 months for the other two groups. A short duration of symptoms before starting treatment is known to confer a better prognosis. The four patients who improved in spite of continuing to drink all had a much shorter duration of symptoms than the average. None of the patients was subjected to prolonged bed rest, as has been advocated by McDonald *et al.*

The Chicago patients showed the usual features of myocardial pump failure in dilated cardiomyopathy. The prognosis at this stage is usually poor, and as expected nearly half of the patients died during a three-year follow-up period. Though this paper sheds no light on the problem of whether alcohol plays a causal role in the initiation of cardiomyopathy, it suggests again that it is usually unwise for patients with heart-muscle disorder to continue to drink. This may be because continuously high blood levels of alcohol are likely to lead to continuous further depression of already impaired myocardial contractility. The problem of the causal role of alcohol is irrelevant to the action to be taken; patients with heart muscle disorders should be advised to refrain from alcohol altogether or to take it only occasionally and in minimal doses.

SURGERY

Planned splenectomy in treatment of idiopathic thrombocytopenic purpura. --(John Richmond, A I.S. MacPherson, *Brit. Med. Jour.* 1975, 1, 64—66).

We report here the results of splenectomy in a series of 72 patients with I.T.P., all of whom had had the operation performed more than one year earlier, The series was examined, firstly, as a whole, secondly, according to whether the history was a long or a short one, and, thirdly, according to whether or not corticosteroids were used before operation. Of these 71 were traced and reviewed periodically from one to 29 years after operation. There was complete freedom from symptoms throughout the period of review in 60 patients and recurrence in 11 (15%). Recurrence took the form of epistaxis in four patients, melæna in three (one of whom had previously had a partial gastrectomy for gastric ulcer), purpura in five, menorrhagia in three, and a cerebrovascular accident in two. The time of the recurrent symptoms ranged from immediately after operation to 12 years later.

There were 24 patients with a history of less than 100 days (short history) and 48 patients with a history of more than 100 days (long history). All the long history patients and 23 short-history ones were reviewed repeatedly over periods from one to more than 20 years after splenectomy.

Whether or not patients had corticosteroids before splenectomy was determined almost entirely by the date of the introduction of these drugs into clinical practice. Altogether 31 patients were operated on without steroid cover and 40 had preliminary treatment which varied in duration from a few days to more than a year. Corticosteroid therapy was followed by more complications after splenectomy but the higher incidence was confined to patients who were given the drugs for longer than three weeks before operation. Of the 10 complications in this group four were directly attributable to the corticosteroids and four were due to infection. By contrast there were no infective complications in those who did not receive steroids before operation. Purpuric symptoms recur-red at some time after splenectomy in nine of the 31 who had no preoperative treatment, and in only two of the 40 who did.

I. T. P. and Pregnancy :—In three patients splenectomy was performed at about the fourth month of pregnancy. In two of these three patients the pregnancy went to full term, and one terminated with an accidental haemorrhage at 34 weeks when the maternal platelet count was 300000/mm. Neither of the full-term children were purpuric, but platelet counts were not recorded. Fifteen pregnancies occurred in six patients after splenectomy. All went to full term except one which terminated at three months. In one 31-year old patient whose platelet count varied during pregnancy between 90000 and 200000/mm. a caesarean section was performed at term and the bleeding at and after operation was recorded as excessive. She subsequently had two more children by vaginal delivery without undue loss. Delivery in every other case was normal and without incident.

Exploration for a possible missed spleniculus was not undertaken in any patient with relapse because in no case were the symptoms sufficiently severe or prolonged to warrant it. Furthermore, Elliott and Turner reported two laparotomies and one necropsy in which nothing abnormal was found in three patients with relapses, which suggests together with the observation that the future of the platelet count can be predicted by its level four to six weeks after operation. that the importance of the spleniculus in causing relapse in I. T. P. may have been exaggerated. It may be possibe to throw light on this problem by the use of scanning after the injection of Cr-labelled, heat-denatured erythrocytes to show the presence of enlarged splenicula.

REVIEWS OF BOOKS

"Text-book of Radiotherapy" (Second Edition)—By Gilbert H. Fletcher, M.D., Radiotherapist. Professor of Radiotherapy, Head of Department of Radiotherapy. The University of Texas, M.D., Anderson Hospital and Tumour Institute, Houston, Texas, 427, Illustrations., Pp. 816; Published by: Lea and Febiger, Philadelphia, 1973. Copies available from M/s. K. M. Varghese & Co., 104, Hind Rajasthan Building, Dadasaheb Phalke Road, Dadar, Bombay-400014. [Price: $ 39·50

This exhaustive treatise on Radiotherapy contains contributions by 45 authors forming the team of radiotherapists, consisting of mostly radiotherapists on the staff of the Anderson Hospital, Houston, Texas and in various hospitals in U.S.A., and a few in the United Kingdom. Surgeons, Dentists, Gynæcologists, Oncologists, Pædiatricians, Physicists and dieteticians, mainly of M.D. Anderson Hospital, are also collaborating with the therapists to bring home the established fact that radiotherapy operates more and more in a closely associated context and to a chemotherapy context in some cancers and to make radiotherapy to achieve its ideal in a given case.

There are 15 chapters covering the radiation therapy for the cancers of different organs with 60 Co units (similar to 4 to 6 Mev beams), the increasing availability of high energy photon beams and electron beams justifies the need to expand on their specific uses. The radiological physics have been limited to practical points of treatment planning only. The results of treatment in the head and neck, breast and gynæcological cancers treated at this hospital have been exhaustively studied. The references are carefully selected and the style is compact and readable.

The get-up of the book is excellent. This book will be widely used by the radiotherapists when they consider that the presentation of a definite outlook is of more value than the discussion of different principles and practice.

Madras
11-6-1975

M. G. Varadarajan, M.D., D.M.R., F.I.C.S., F.C.C.P., F.A.I.M., F.A.M.S., F.A. Sc.,

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BOOKS RECEIVED

Futures Trends in inflammation.—By Mr. G. P. Velo, Mr. D. A Willoughby and Mr. J. P. Giroud; Pp. 500, Institute of Pharmacology, 21, Rue de l' Ecole de Medicine, Paris 75270, France [Price $ 45/-

The Clinical and Biochemical Significance of Human Immunoglobulins—(2 copies) By D. Kumar, Ph.D., Pp. 60; Mr. Amar Nath Vidyalankar, Member of Parliament, (Lok Sabha), 87, Shahjahan Road, New Delhi-110011. [Price : Rs. 5/-

Health Care in the People's Republic of China—Bibliography with Abstracts—By Mr. Shahid Akhtar; Pp. 190, M/s. International Development Research Centre, Publication Division, Distribution Officer, P. O. Box No. 8500, Ottawa, Canada KIG 3H9.

Treatment in Clinical Practice—By D. P. Gupta, M.D., M.R.C.P., F.R.C.P., F.I.C.S., F.C.C.P. and Dr. Brig, M. P. Goel, M.D., F.R.C.P., T.D.D., F.C.C.P., Pp. 440, M/s. Mediscope, Dr. R. Ramarau Polyclinic 453-454, Poonamallee High Road, Kilpauk, Madras-10. [Price : Rs. 40/-

The Principles and Practice of Blood Grouping—By Addine G. Erskine, D.Sc., Litt, D., (Hon), Pp, 370; The C. V. Mosby Company, 3301, Washington Boulevard, St. Louis, Missouri-63103. [Price : $ 16-75

Selected Articles of Prof. R. V. Rajam—Medical and Non-Medical—Pp. 520; Dr. R. Mahadevan, M.S., F.R.C.S., (Eng.), F.R.C.S., (Edin.), F.A.M.S., Gomathi, 6, First Main Road, C.I.T. Colony, Madras-600004. [Price : Rs. 15/-

The Alexander Principle—How to use Your Body—By Mr. Wilfred Barlow, Pp. 224; Ms. B. I. Publications, 13, Agurchand Mansions, 1st Floor, 35, Mount Road, Madras-600002.

Physiology for Practitioners—Second Edition —By Ian C. Poddie, T.D., D.Sc., M.D., F.R.C.P., Pp. 200; M/s. B. I. Publications, Promotion Department, 359, Dr. D. N. Road, Bombay, 400001. [Price £ 2·00 or Rs. 40/-

Treatment of shock : Principles and practice—By William Schumer, M.D., and Lloyd M. Nyhus, M.D., Pp. 224; M/s. K.M. Varghese Company, 104, Hind Rajasthan Building, Dadasabeb Phalke Road, Dadar, Bombay-400014. [Price : $ 12-50

Topics in Blood banking—By Neva, M. and Abelson, M.D. Pp. 180 ; M/s. K.M. Varghese Company, 104, Hind Rajasthan Building, Dadasaheb Phalke Road, Dadar, Bombay-400014. [Price : $ 9-75

Laboratory Medicine—Clinical Microscopy—By James, A. Freeman, M.D., and Myrton, F. Beeler, M.D., Pp. 412 ; M/s. K. M. Varghese Company, 104, Hind Rajasthan Building, Dadasaheb Phalke Road, Dadar, Bombay-400014, [Price : Rs. 100/

NEWS AND NOTES

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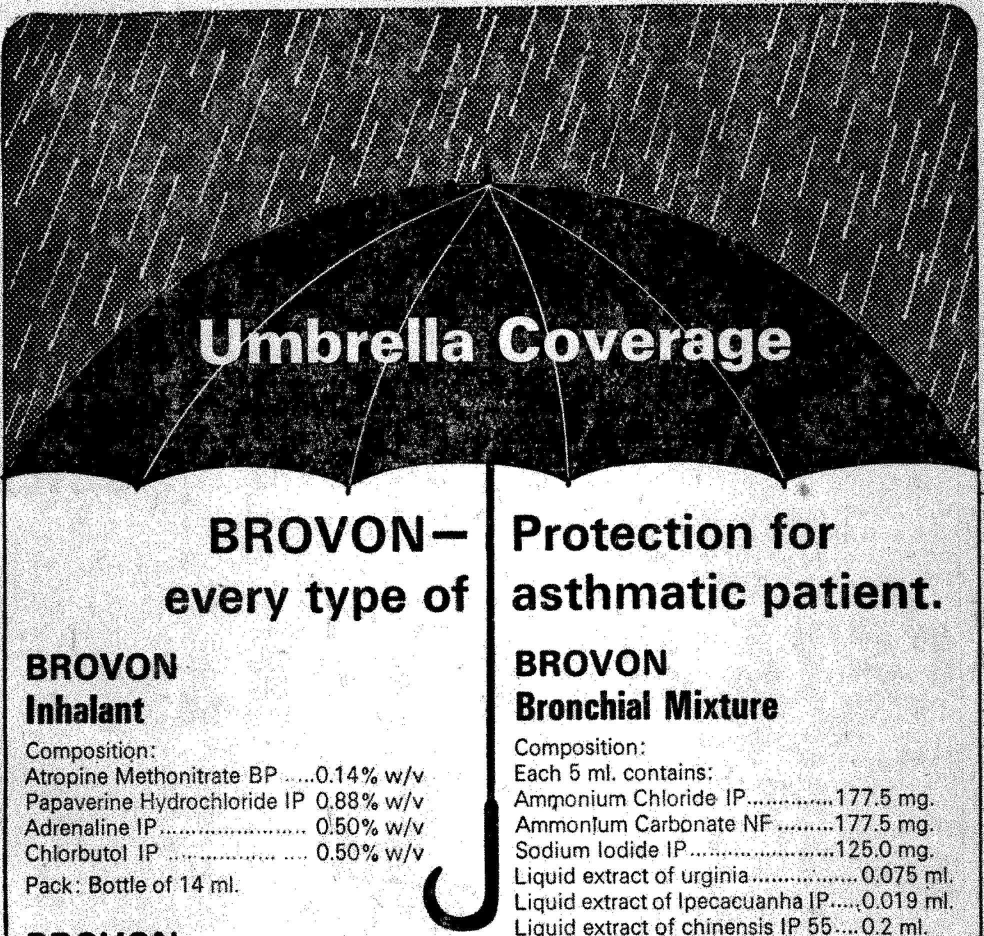

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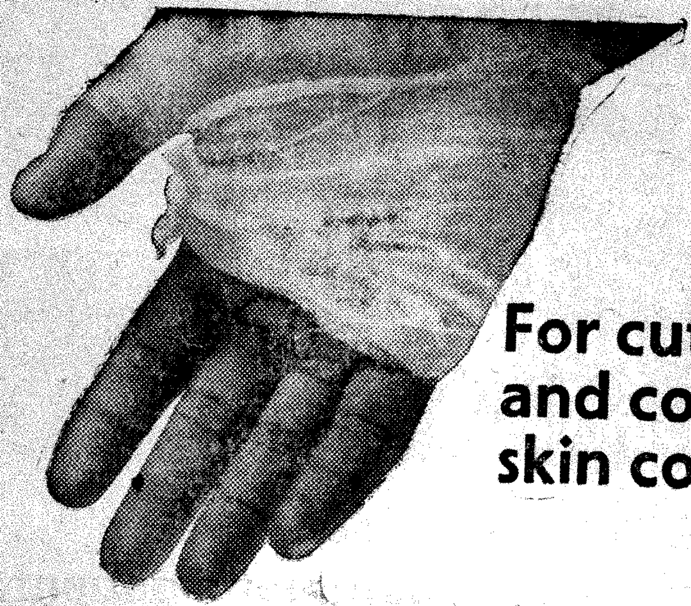

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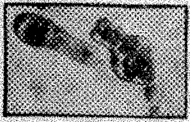

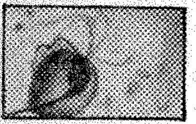

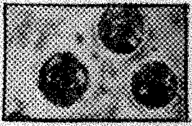

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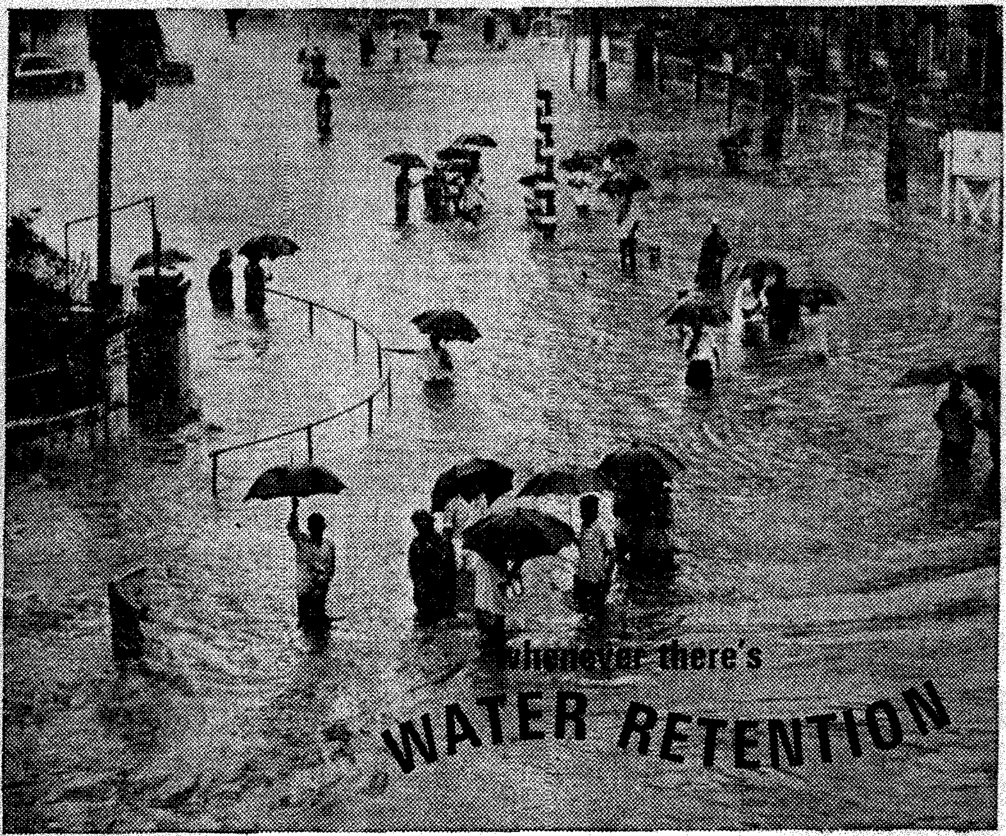

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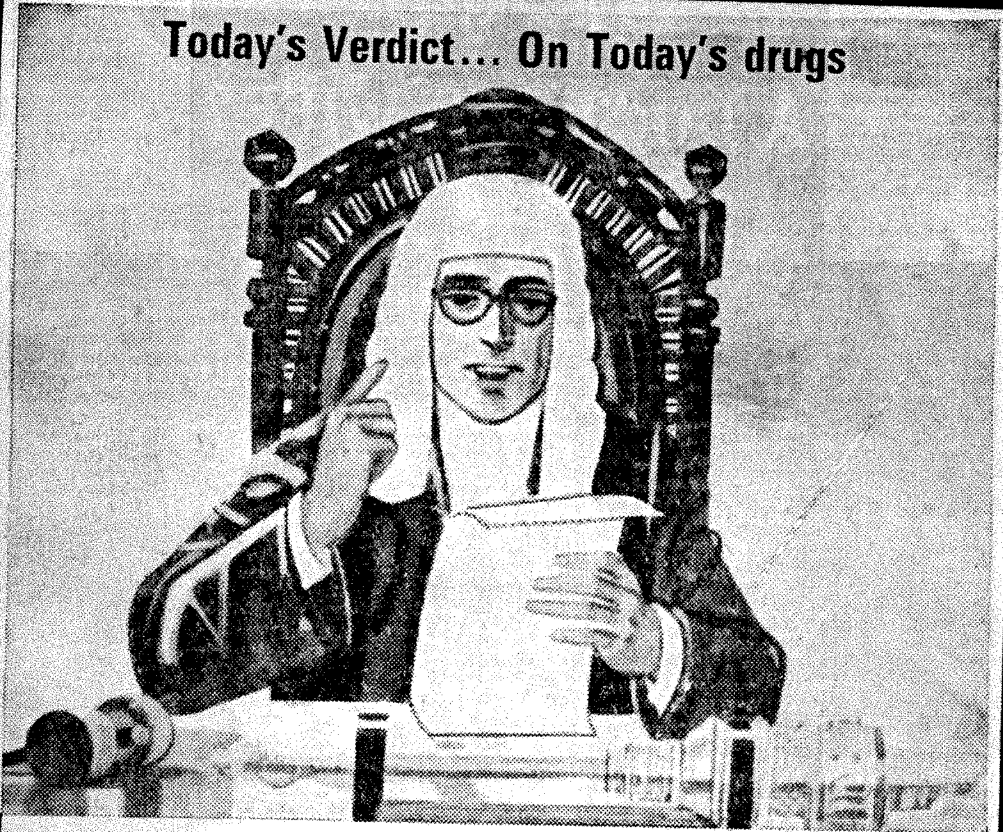
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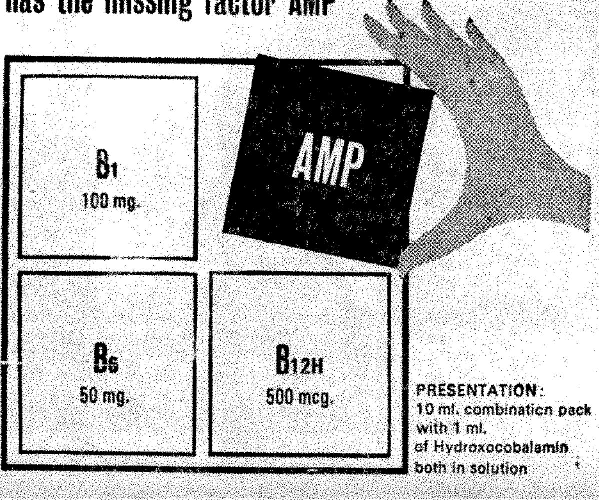

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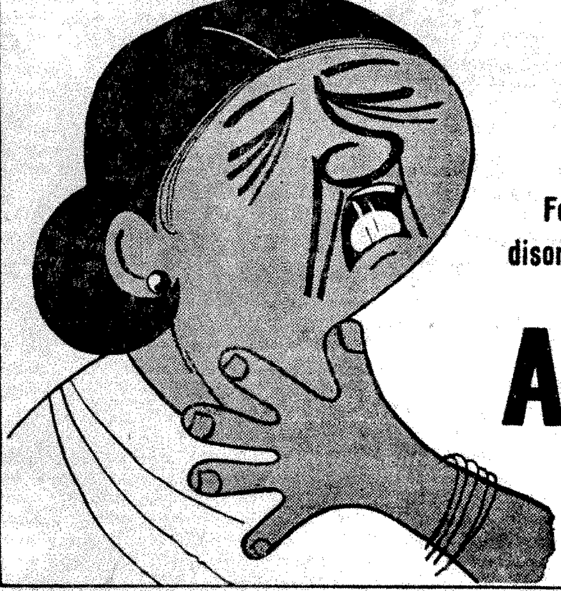

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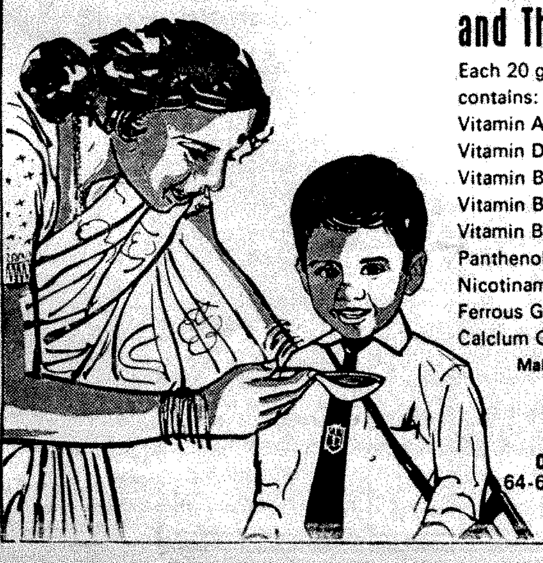

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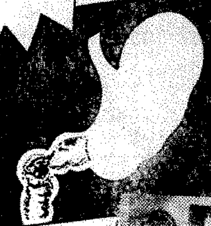

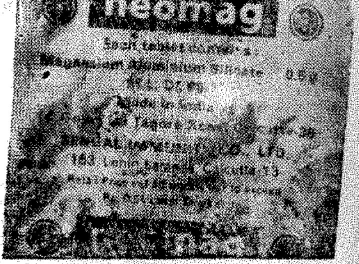

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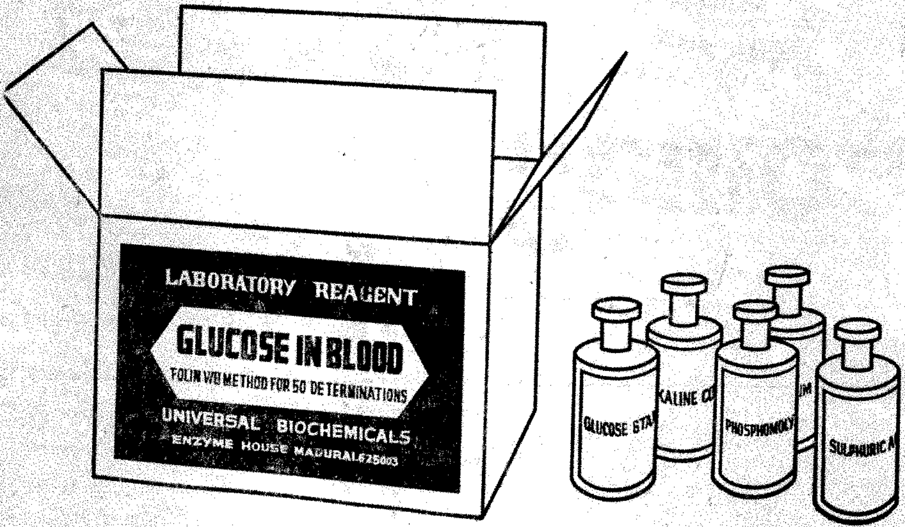

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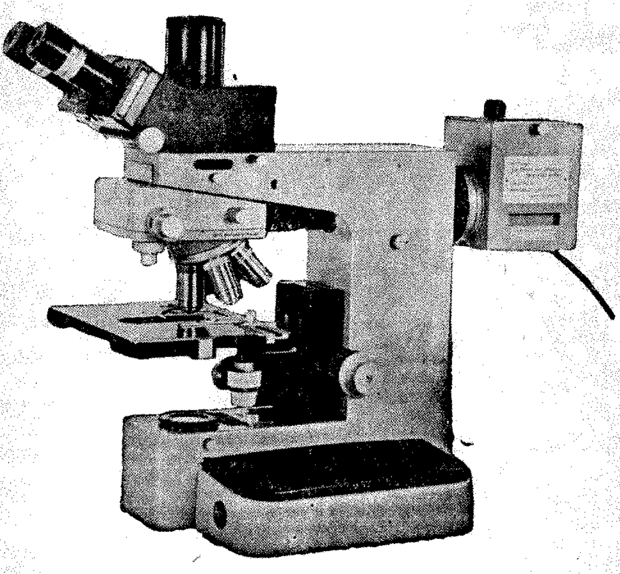

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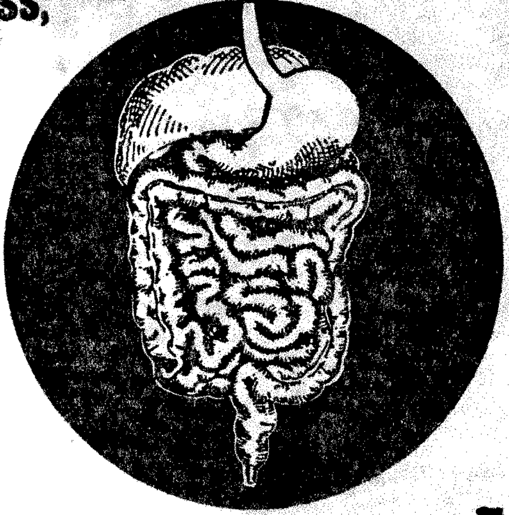

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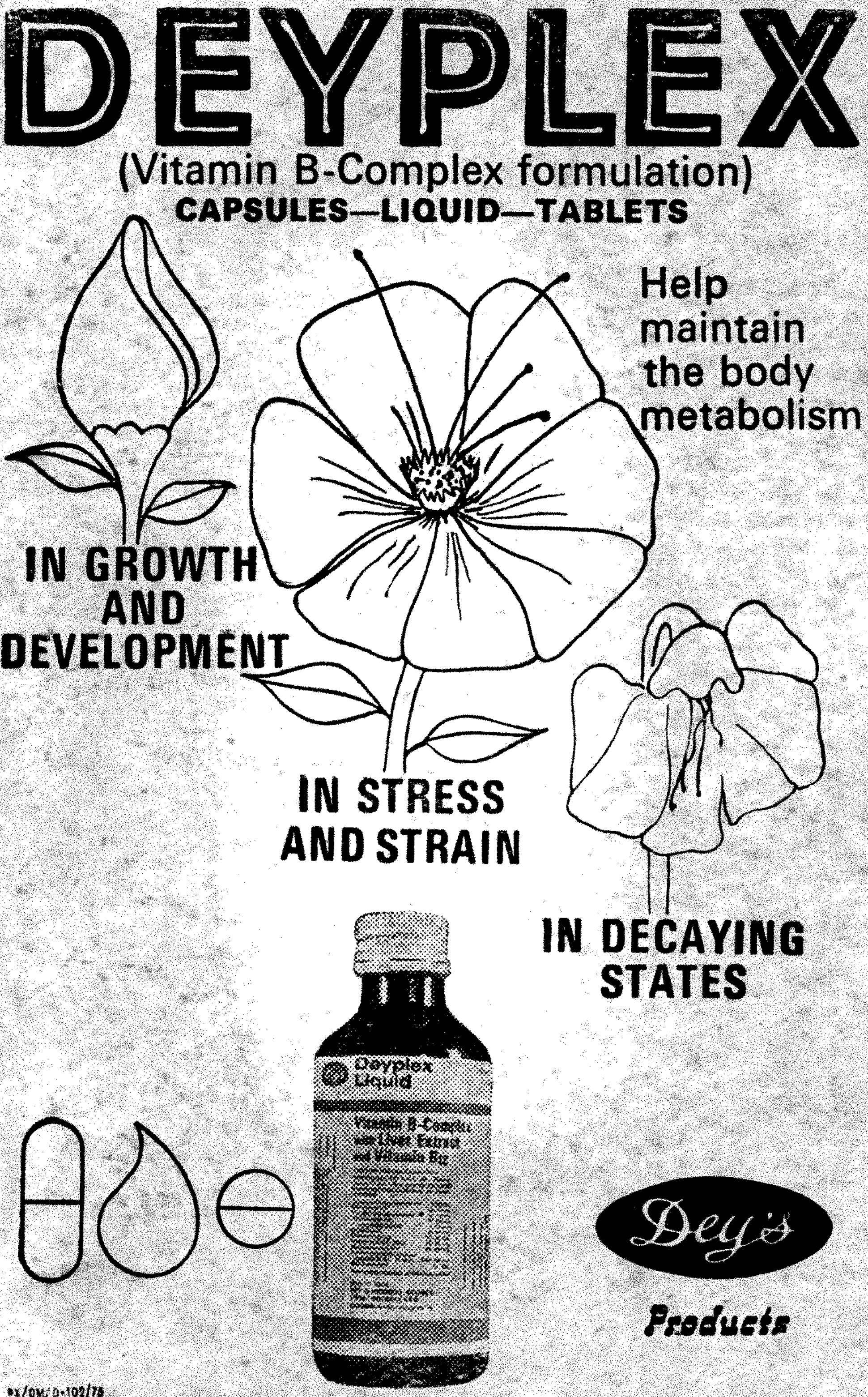

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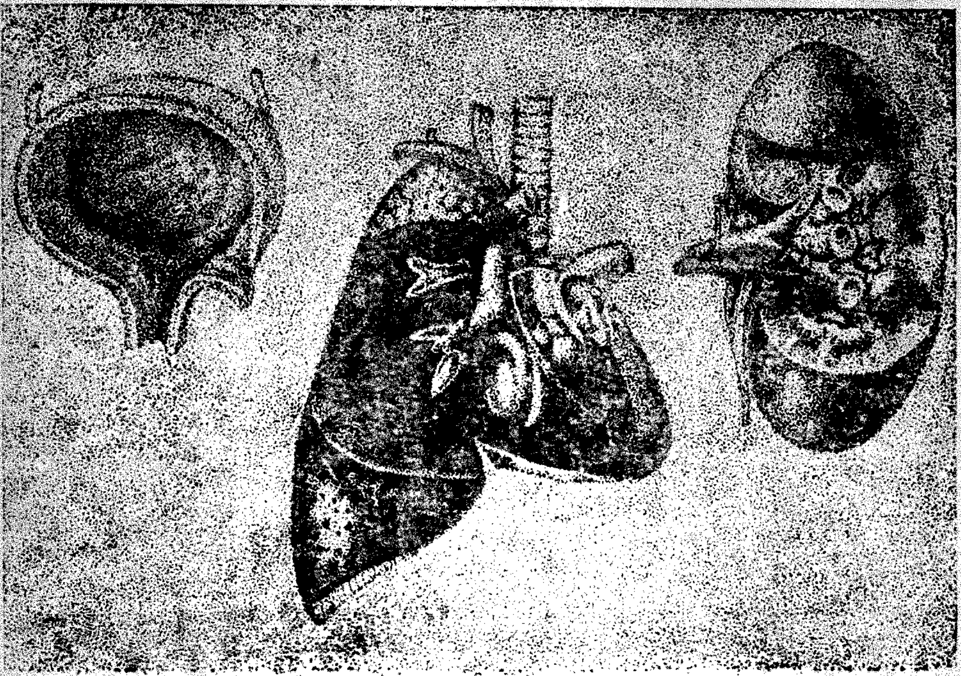

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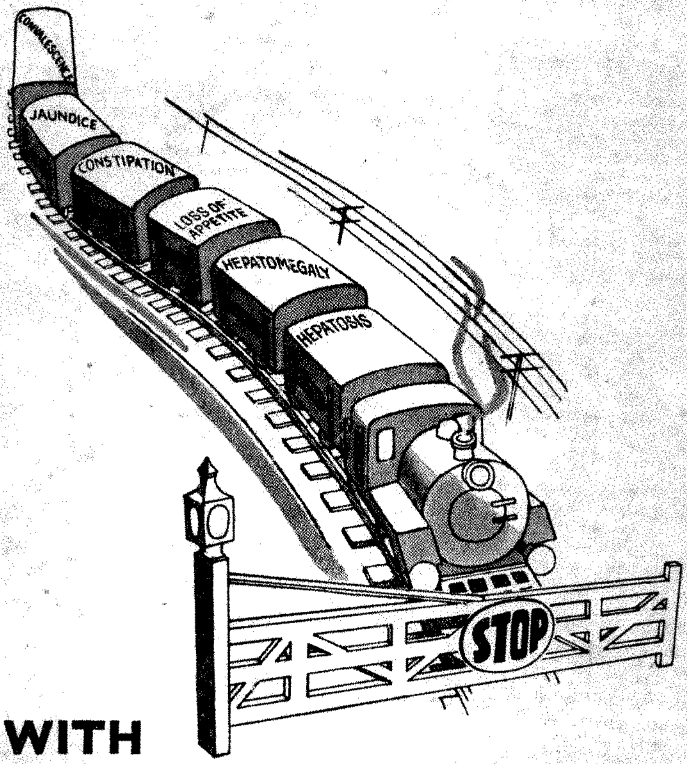

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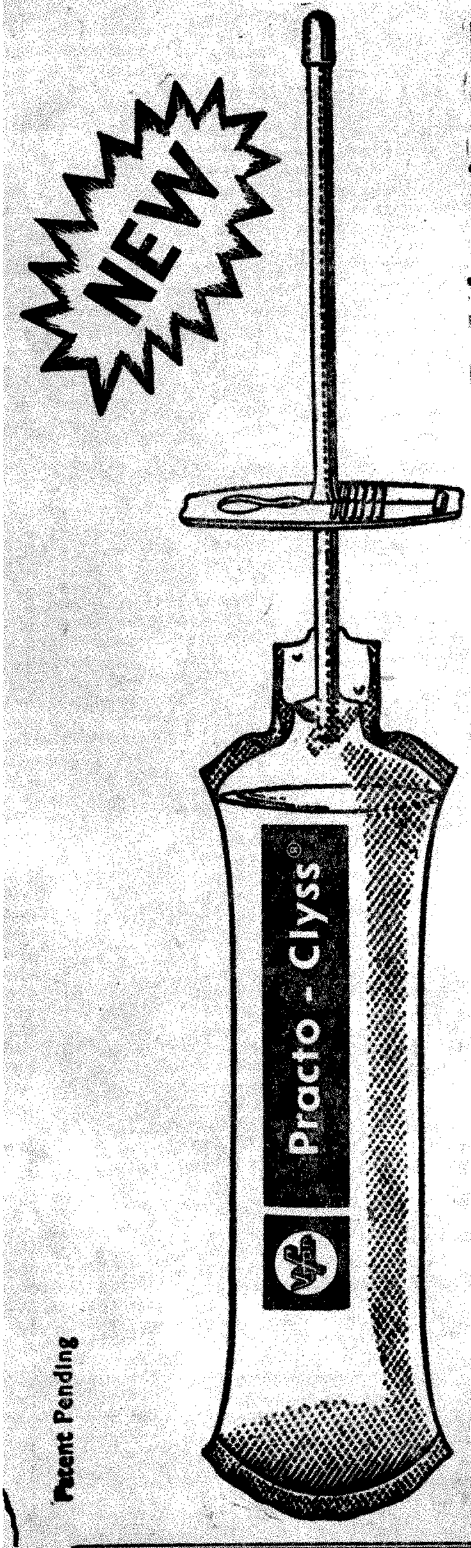

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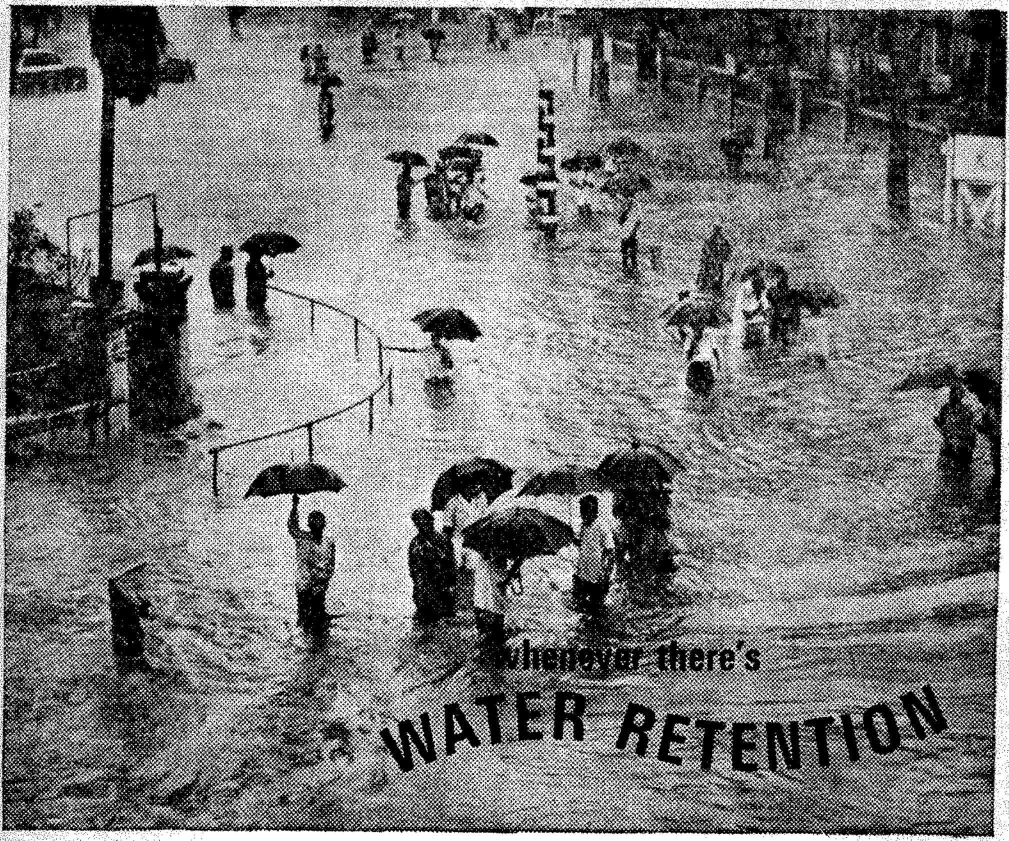

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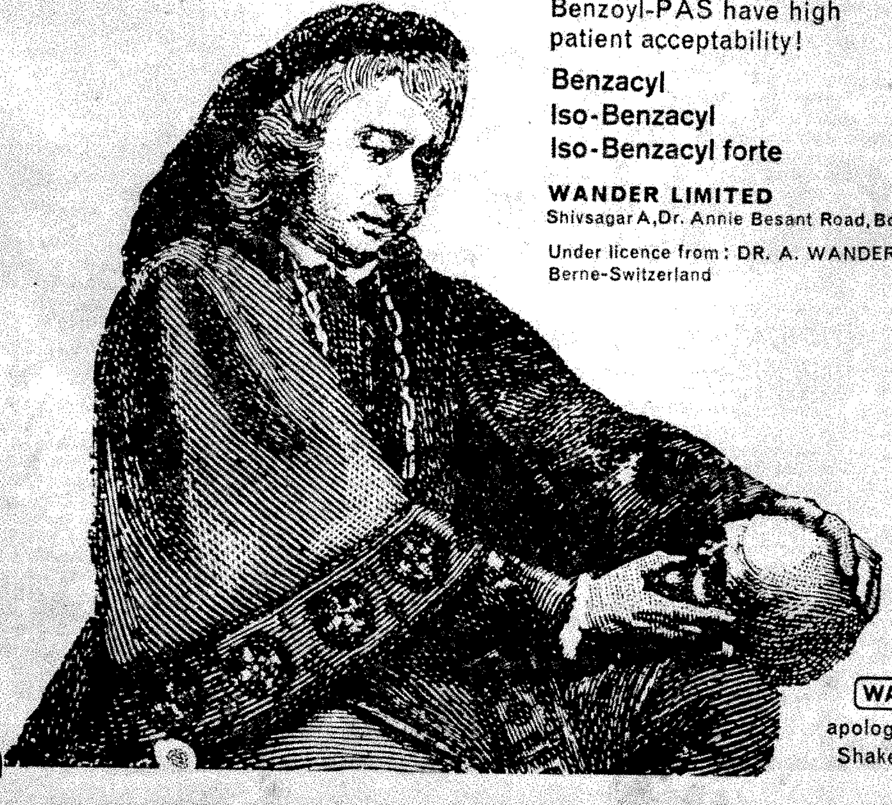

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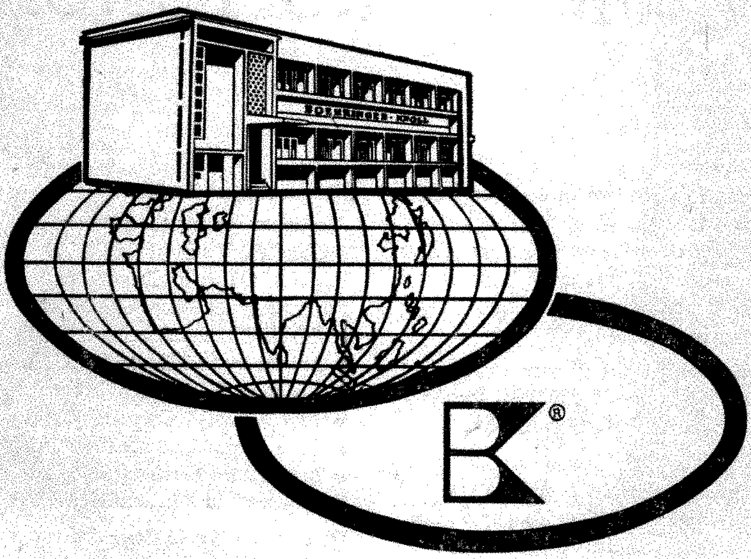

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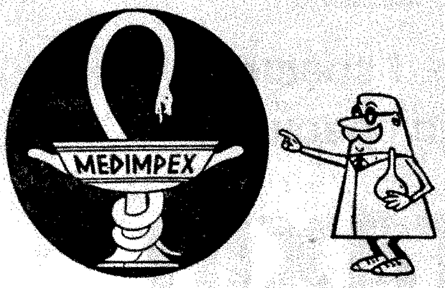

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—Agarwal, K.C. and Chitkara, N.L.,
Proc. 1st Asian Symp. on Gentamicin, Dec. 10, 1973.

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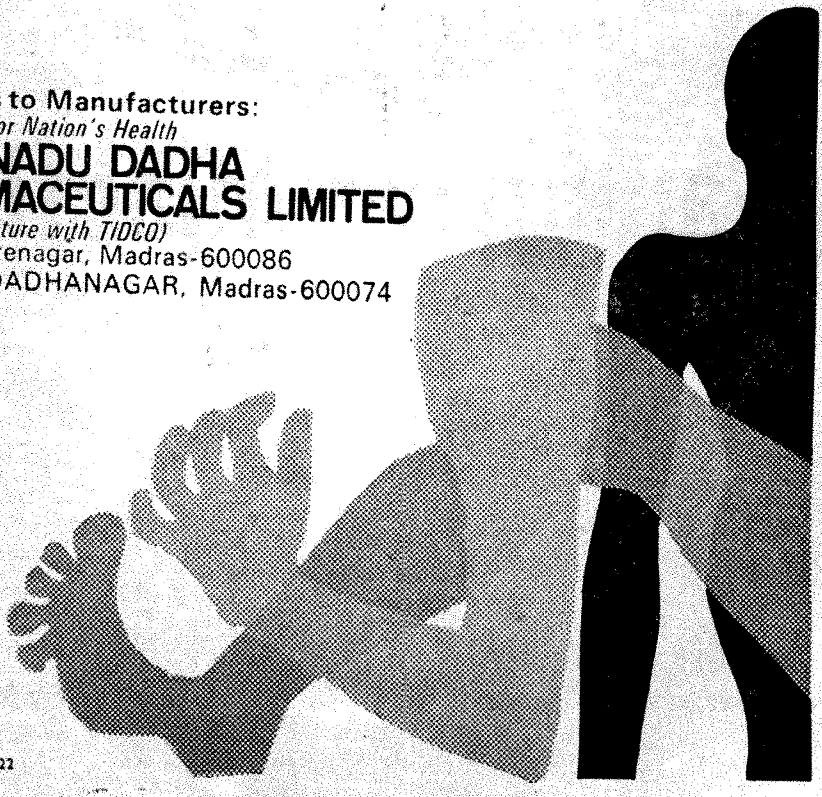

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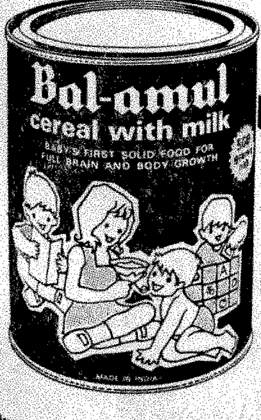

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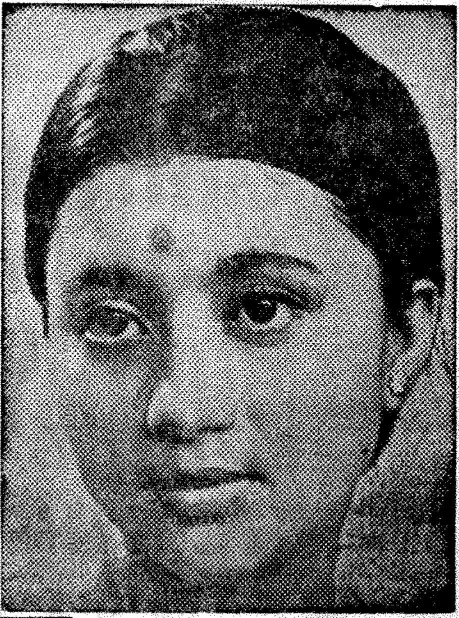
*(Refer Heinen G., Prakt. Arzt. 12.1970)



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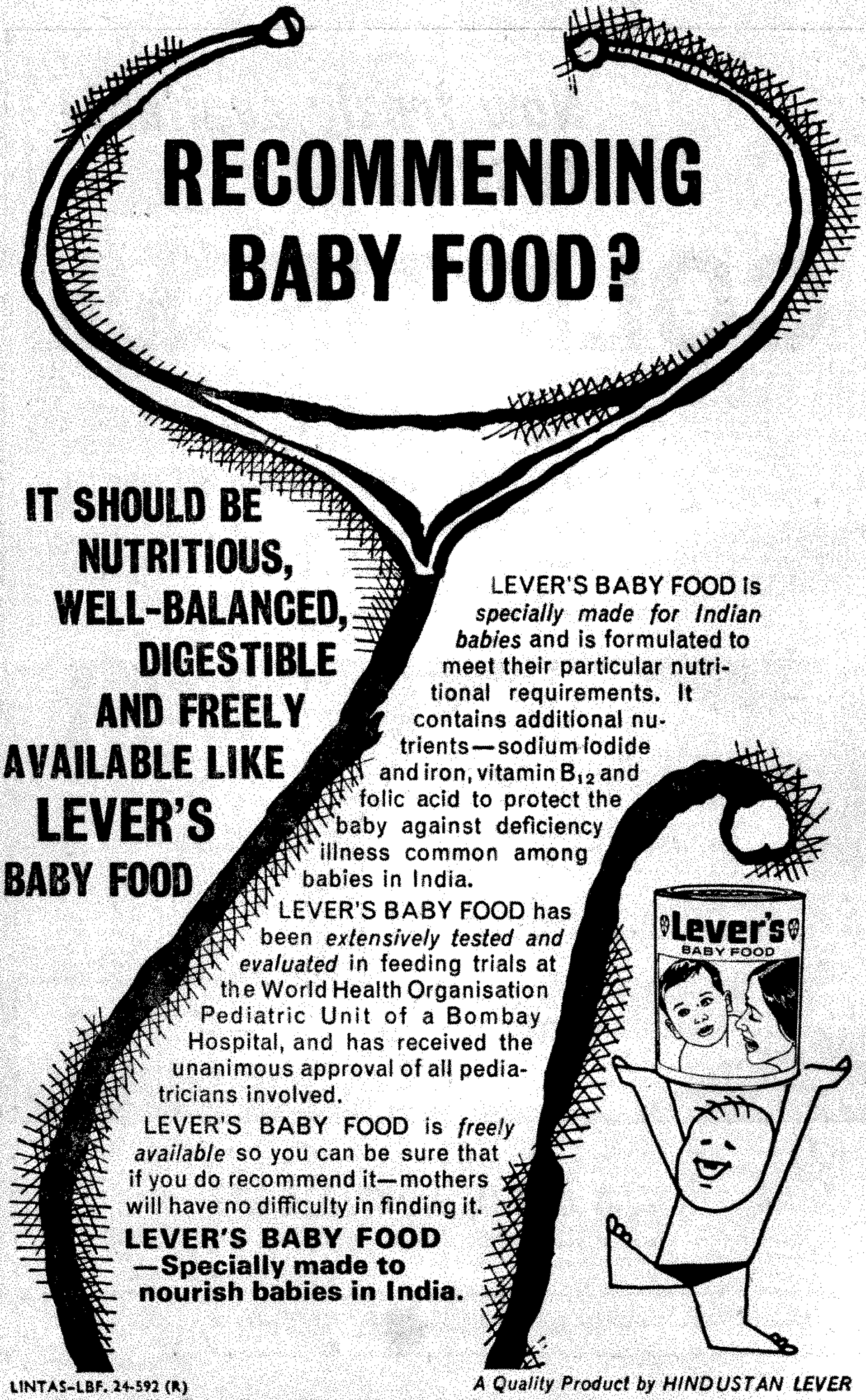

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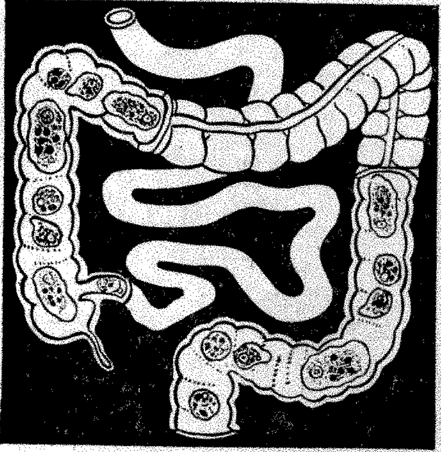

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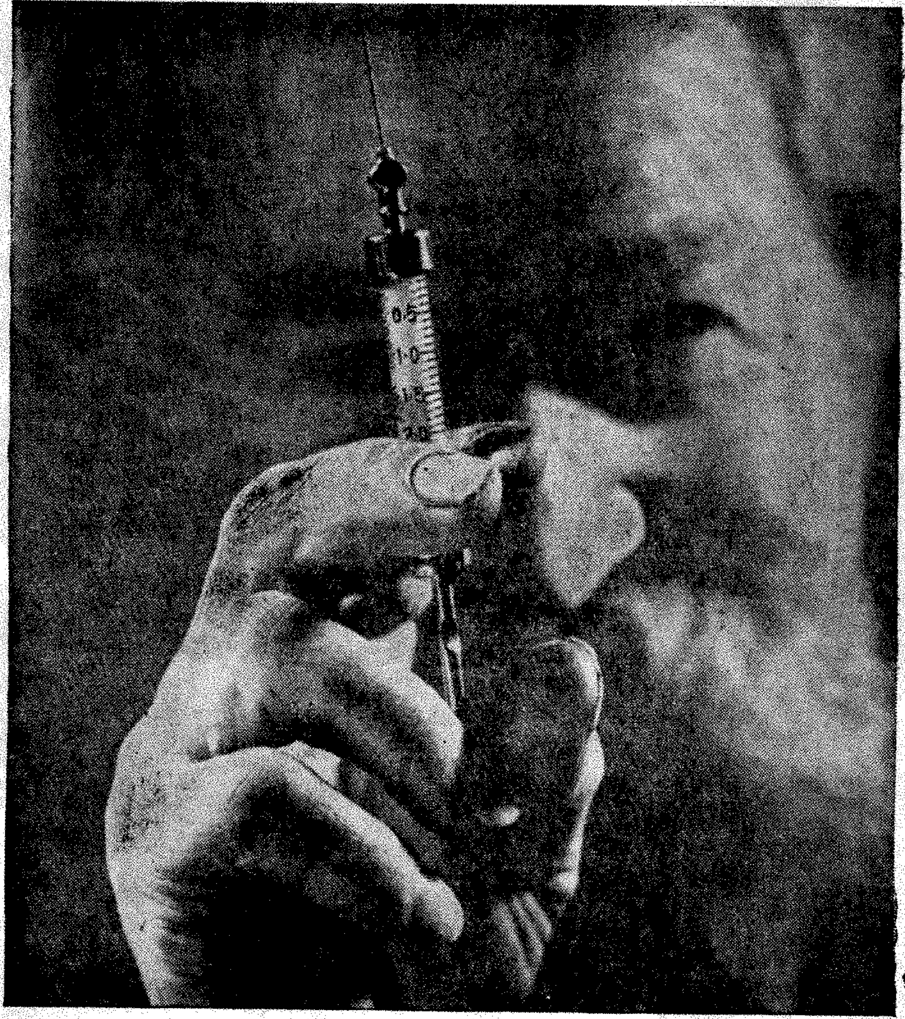

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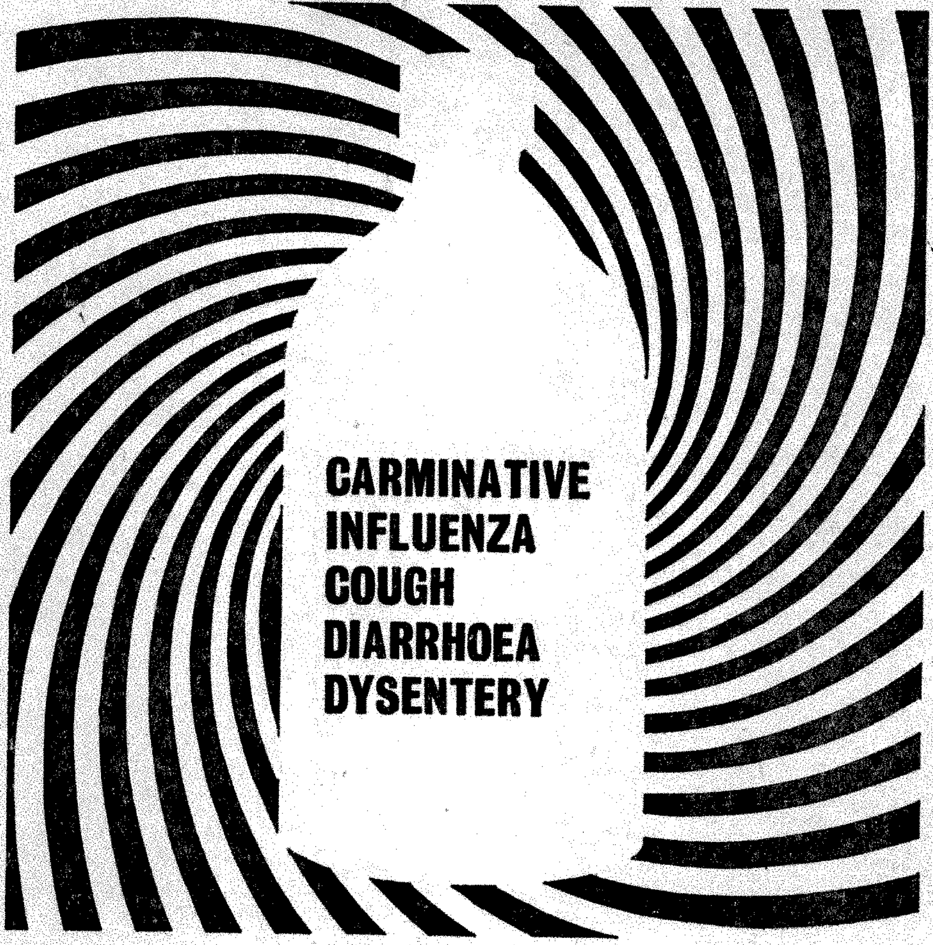

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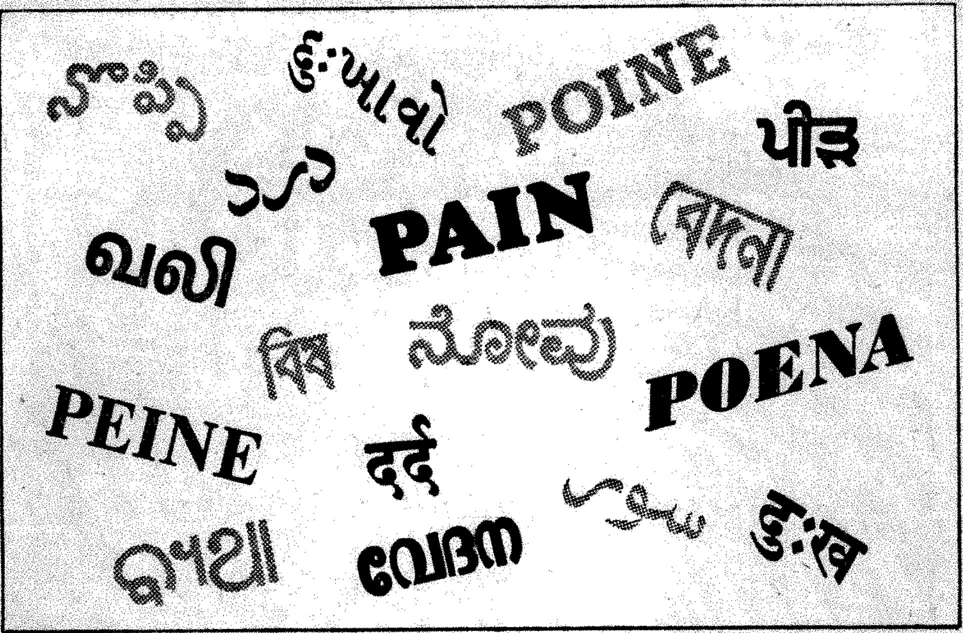

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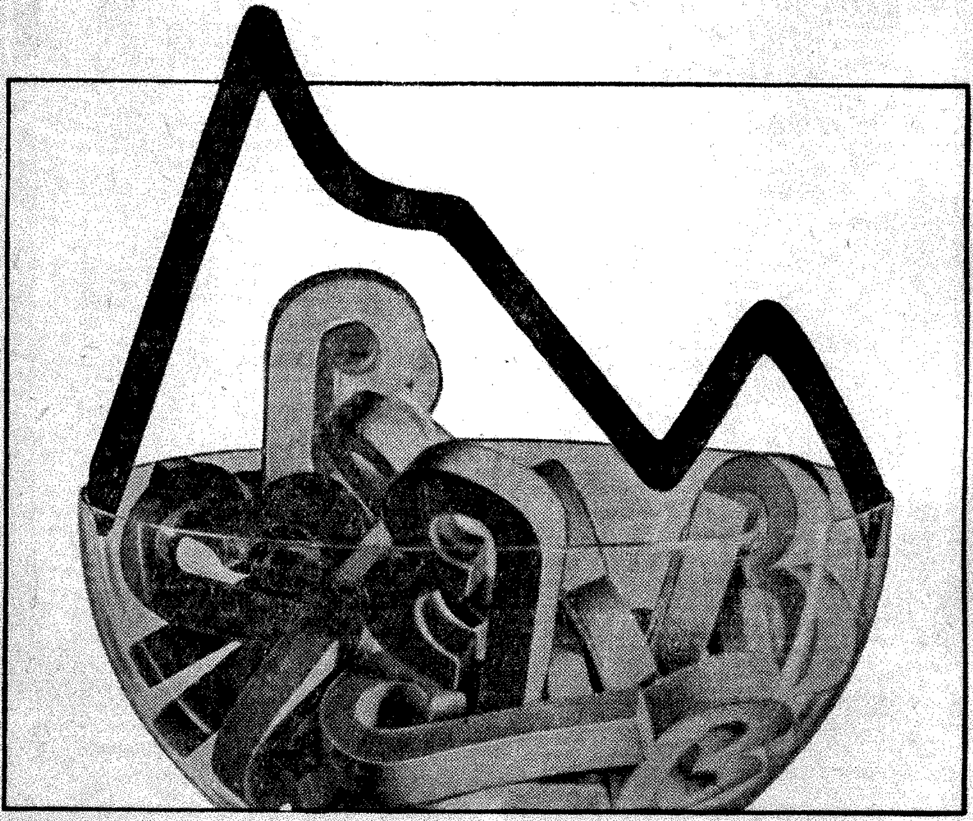

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—Kean & Haskins. In: Drugs of Choice—1974-75 (Ed. Modell, W.). 1974-75 Edition. p. [illegible]

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—Prescribers' Journal—April 1971 Volume Eleven, p. [illegible] "

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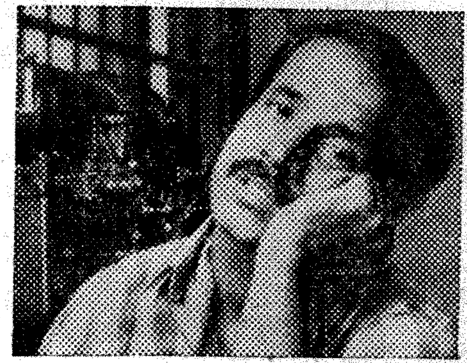

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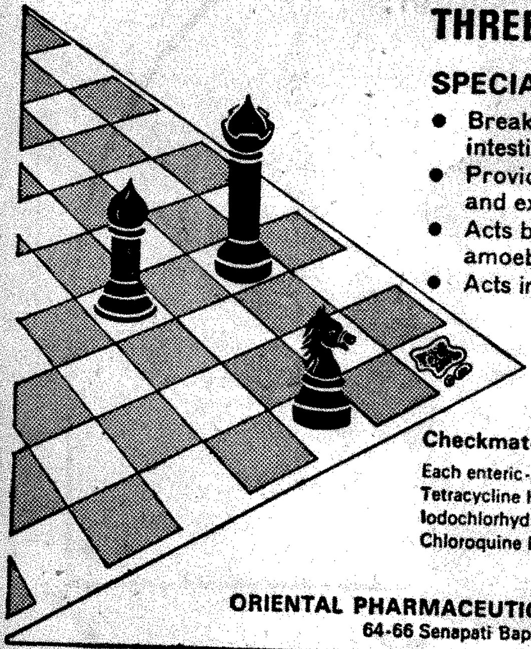

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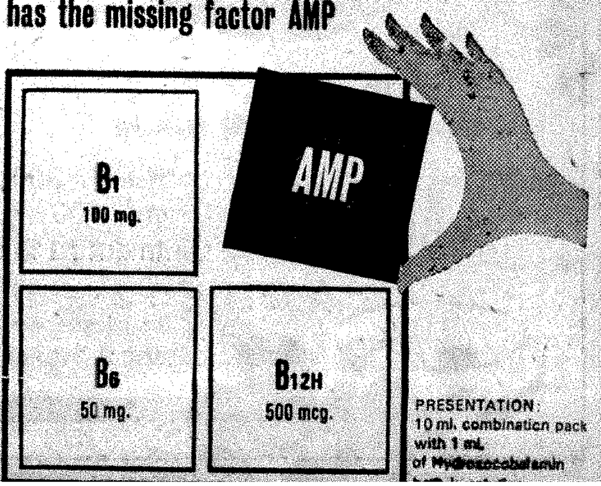

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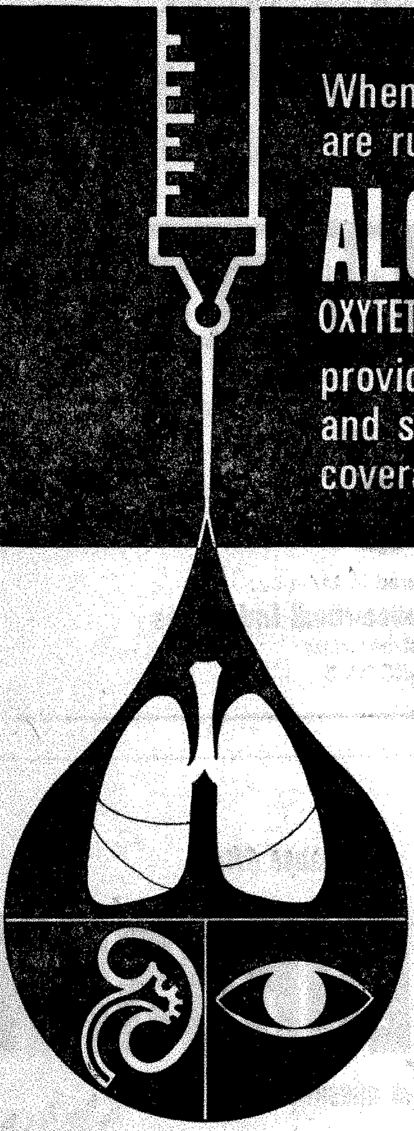

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Vol. 72 SEPTEMBER, 1975 No. 9

AUSTRALIA ANTIGEN AMONG PROFESSIONAL BLOOD DONORS AND IN ACUTE VIRAL HEPATITIS AT MADRAS*

P. B. SADASIVAN, M.D.,
Hony. Professor of Therapeutics, Stanley Medical College and
Hony. Physician, Government Stanley Hospital, Madras
AND
S. VAITHIANATHAN, M.B.,B.S.,
Post Graduate, Government Stanley Hospital, Madras

INTRODUCTION :—Since the incidental discovery of *Australia antigen* by Blumberg and his associates Australia antigen is being studied in detail by medical men of the different branches. This antigen is found to be closely associated with serum hepatitis. It is known by several names, *viz.* hepatitis-associated antigen, hepatitis-B antigen and is now known as hepatitis-surface antigen or HBs Ag. Screening the blood donors for HBs Ag., and excluding the Australia antigen carriers might significantly reduce the risk of developing hepatitis in the recipients as well as in those handling the blood products. Studies on Australia antigen among professional blood donors and patients suffering from acute hepatitis in the South Indian population are limited.

The present study was undertaken in order to determine the prevalence of Australia antigen among professional blood-donors and its incidence among patients suffering from acute viral hepatitis at Madras, because of the frequent occurrence of post-transfusion hepatitis. Attention was paid to find out the serum enzyme levels and the preponderance of blood-group in the ABO system in the Australia-antigen-positive patient, and the mode of transmission.

---

*Specially contributed to the 'ANTISEPTIC'.

Material and methods.—Conditions like lepromatous leprosy, leukæmia and other conditions associated with the presence of the Australia antigen were excluded in all professional blood-donors and in patients with acute viral hepatitis taken up for this study.

Professional blood donors:—These are persons who donated blood at the Blood Bank, Government Stanley Hospital for money. One hundred professional donors were studied.

Acute viral hepatitis:—Twenty patients admitted for acute viral hepatitis at the Government Stanley Hospital, Madras were studied. The criteria for diagnosis was essentially based on the history, clinical and bio-chemical findings and in all these patients liver biopsy was refused by the patients. In addition to the routine liver function tests, Serum glutamic-oxaloacetic transaminase (SGOT) and Serum glutamic pyruvic transaminase (SGPT) levels were also ascertained.

Collection of blood specimens:—One serum sample was taken from each of the 100 blood donors at the time of collection of blood. One serum sample was taken from all cases of acute viral hepatitis when they were in the active stage of the hepatitis. The sera were kept in the refrigerator overnight and tested without dilution on the following day at the King Institute, Guindy, Madras.

Source of antigen and antibody:—Australia antigen-positive human serum and human serum containing antibody to Australia antigen were obtained from the Enterovirus Laboratory of the Christian Medical College Hospital, at Vellore.

Method:—Even though many methods are followed for detection of Australia antigen, the Immuno-Electrophoretic method was selected because this method has been followed in most published works on Australia-antigen and it is easy to compare our results with those of other workers.

The Electrophoretic method followed in this study is similar to that followed by Peter, G. Hill *et al* (1972).

Results—(*a*) *Professional blood-donors*:—It was found that the distribution of Australia-antigen in the hundred male professional donor was 16%. The prevalence in our blood donors is high compared to that in other reports that are available (*see* **Table I**, *below*).

Table I

Showing the prevalence of Australia-antigen among professional blood-donors

Bombay :	(Blood Group Referring Centre 1970)	—	4%
Nigeria :	(Smith *et al* 1972)	—	5·1%
Vellore :	(Peter, G. Hill *et al* 1973)	—	3·8%
Madras :	(P.B. Sadasivan, S. Vaithyanathan)	—	16%

The distribution of ABO group antigens and their relationship to Australia-antigen carrier-state among the donors is given (*see* Table II, *below*). The percentage of Australia-antigen carrier-state is almost equal in groups '*B*' (21·2%) and '*O*' (20%). It was absent in '*AB*' group and was about 6·89% in group '*A*'.

TABLE II

Showing the distribution of ABO Blood group antigens and their relationship to Australia antigen carrier state in 100 professional male blood donors

Blood-group	O	A	B	AB
No. of Blood donors	35	29	33	3
Blood group as % of total	35%	29%	33%	3%
No. of Australia antigen positivity	7	2	7	O
Percentage of Australia antigen positive	20%	6·89%	21·21%	O

(*b*) ***Viral hepatitis*** :—Out of the 20 patients with viral hepatitis taken up for this study, five were associated with Australia antigen. Among the five, two cases had hepatic failure and fatal end. In one of them who was a house-physician, the Australia-antigen was found to be positive, six weeks after the collection of the first blood specimen. None of the fifteen patients who were negative for Australia-antigen developed hepatic failure or had a fatal end.

Serum glutamic oxaloacetic transaminase (SGOT) was found in the range of 42 units to 190 units in all Australia-antigen positive patients with viral hepatitis. Among Australia-antigen negative cases SGOT was found to be in the range of 18 to 120 units. With regard to SGPT the range was between 40 and 120 units in positive cases. In negative cases the SGPT range was between 12 and 80 units.

Among the Australia-antigen-positive patients the distribution of the blood-group antigen is as follows:

Group '*B*' — 3; Group '*A*' — 1; Group '*O*' — 1

A patient in '*O*' group and one of the patients in '*B*' group died after fulminant hepatic failure. In patients with Australia-antigen negative hepatitis the distribution of blood group antigens is as follow:

Group 'A'— 6 ; *Group 'B'*—4 ; *Group 'O'* 4 ;—*Group 'AB'*—1.

The results of serum enzyme level in positive cases and the mode of transmission will be found in Table III, *overleaf*.

TABLE III

Case No.	Age	Sex	Blood group	Mode of infection	Jaundice	SGOT (I.U.)	SGPT (I.U.)
1	12	F	'A'	Post-transfusion (2 months and 10 days earlier)	+	80	60
2	24	M	'B'	Repeated I.V. Injn.	+	60	40
3	20	M	'O'	Contact unknown	+	190	120
4	25	F	'B'	Contact unknown	+	42	64
5	23	F	'B'	I.V. Transfusions of glucose saline (3 months earlier)	+	60	50

The comparative incidence of Australia-antigen in acute viral hepatitis from reports of other workers is shown in Table IV, *below*.

TABLE IV

Incidence of Australia antigen in acute viral hepatitis in different places

United States	:	(Quoted from progress in clinical Medicine 1971)	49%
New Delhi	:	(Dutta and Mohd)	22%
Chandigarh	:	(S. R. Pal *et al* 1973)	23%
Madras	:	(P.B. Sadasivan and S. Vaithianathan	26%

Discussion.—Blumberg *et al* (1970) found Australia antigenemia in 2·4% after screening 127 non-hospitalised South Indians. Sam *et al* (1971) reported from Delhi that out of 952 normal subjects, only one Australia-antigen carrier was detected. S. R. Pal *et al* from Chandigarh reported prevalence of 1·6% among normal Healthy population. Prevalence of 1% and 2·2% among voluntary blood donors have been reported by blood Group Referring Centre, Bombay and S. R. Pal *et al*, Chandigarh respectively.

In the present study, the incidence of 16% among professional blood donors is quite high as compared to the studies reported above. The reasons for this high prevalence among professional blood-donors may be multi-factorial. This may be due to frequent blood-donations resulting in transmission through needles, similar to the prevalence in drug addicts (Nordenfeldt *et al* 1970, Greig 1972). Cherubin (1972) from studies in U. S. A. found an inverse relationship between income and the carrier state. In this study as the donors belong to the poorer section of the population their basic amenities and other environmental factors are below the normal standard of living. This results in the necessity of living together in small, tenements under bad hygienic conditions and so the chances of transmission by faecal-oral (Krugman *et al* 1967, Giles J. McCollum, R. W. *et al* 1969), air-borne (Almeida *et al* 1971) tattooing and venereal routes are great. The role of the mosquito cannot be ruled out as mosquito-vectors also have been reported to be the transmitting agent in Nigeria (Smith *et al* 1972) Kenya and Uganda (Prince *et al* 1972).

The ages of blood donors in this study ranged from 20 to 47 years but more than 90% of the donors were below 30 years of age. The donors found positives for Australia-antigen were in the age group of 24 to 32. Being healthy and young, the possibility of sexual transmission in these donors due to extra-marital contacts which were present in most of them could not be ruled out as many workers have suggested such transmission. G. Papaovangeloan *et al* (1974) found a higher incidence of Australia antigen among prostitutes. Jenny Heathcote and Sheila Sherlock (1973) reported the possibility of transmission among homo-sexuals. K. W. M. Fullford *et al* (1973) found out a higher incidence of Australia antigen in patients attending a clinic for sexually transmitted diseases.

ABO distribution among professional blood-donors:—Significant association of Australia-antigen and Blood-group '*A*' has been reported by T. I. Francis and J. I. Smith (1973). Peter, G. Hill *et al* (1973) found no relationship between Australia antigen and *ABO* blood group system. In the present study group '*O*' (20%) and group '*B*' (21·2%) are almost equally associated with Australia-antigen.

Acute viral hepatitis:—We found an incidence of 25% in our study. This accords with the findings of other workers from India. The reason for the low incidence among Indian patients, as suggested by other workers, is that hepatitis due to other pathological agents (Infectious hepatitis or other agents) is probably more common in all tropical countries like ours.

Two fulminant hepatitis cases in the present study were positive for Australia-antigen and both had a fatal end. No definite history of parenteral injection could be elicited in these two patients. S.R. Pal *et al* (1973) reported after screening 101 patients with acute viral hepatitis that all fulminant hepatitis found positive for Australia-antigen ended fatally.

Serum enzymes:—Baxi *et al* (*ICMR, Technical Report Series 24*) had found that the level of SGOT and SGPT were considerably higher in patients with viral hepatitis which were negative for Australia-antigen as compared to positive cases. They also reported that the patients who were positive for Australia-antigen show only a moderate rise in SGOT and SGPT. Pal *et al* in a study of healthy carriers of Australia-antigen found minimal elevation of SGPT in carriers in whom the antigen was detected only in the undiluted serum. In carriers in whom the antigen could be detected in a titre of 1 : 4 or above, the SGPT level falls within normal range 5 to 12 *i.u.* They also recorded healthy carriers who were carrying the antigen for the previous 20 months with fluctuations of SGPT levels (5 to 31 *i.u.*, in his blood samples.

In the present study where only undiluted serum was used for detecting Australia-antigen, higher levels of SGPT and SGOT were obtained. The highest level of SGPT and SGOT is recorded in Australia-antigen-positive patients and one (Case number 3) had a fatal end. In general, it was found that the serum enzyme level increase is greater in Australia antigen-positives than in the negative cases.

Mode of transmission.—Among the five patients found positive for Australia-antigen there was a history of intravenous infusion in 3. In the other 2 cases, the history is not suggestive of parenteral transmission. In these latter two cases nonparenteral transmission must be considered.

Conclusion.—From this study it is manifest that the high incidence (16%) of Australia-antigenemia in professional blood-donors which is a potential source of danger in the transmission of serum hepatitis giving rise to a high morbidity and mortality. Hence it becomes our moral responsibility to screen, every professional and voluntary blood donor for Australia antigen. The asymptomatic professional blood donors transmit the disease, to their relatives and close contacts and it has been found that they also suffer from incipient liver diseases.

Summary.—Sera from 100 professional blood donors were screened for the presence of Australia antigen by Immuno-electrophoretic method. The over-all prevalence was 16%. The possible causes of increased prevalence among professional blood donors have been discussed. The importance of avoiding transfusion of Australia antigen positive blood has been emphasised. Blood group '*O*' and '*B*' were found associated more frequently than groups '*A*' and '*AB*'.

20 cases of acute viral hepatitis were studied and in them the incidence of Australia antigen was 25%. Blood group '*B*' was predominated in Australia antigen positive cases. SGPT & SGOT were found increased more in Australia antigen positive cases than in the negative. The possible mode of transmission has also been discussed.

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MAY OFFICE NURSE GIVE INTRAMUSCULAR INJECTIONS IN PHYSICIAN'S ABSENCE ?

Q : Is there a clinically significant incidence of acute anaphylactic reactions to the following drugs administered intramuscularly in the physician's office to patients with no personal or family history of allergy to procaine penicillin, penicillin G benzathine (Bicillin). cyanocobalamin, vitamin B complex liver extract, oestradiol testosterone propionate, demerol hydrochloride ? Is it a common practice for the physician to permit his office nurse, in his absence, to administer injections to drugs such as those listed, on his specific instructions for individual patients ? If so what precautions should be taken against the hazards of anaphylaxis ?—(Herbert J. Rosen, M. D. Dover, N. J.).

A : There are really no generally satisfactory incidence figures for acute anaphylactic reactions to particular drugs (even in the case of penicillin). When penicillin G benzathine has been administered on a large scale to healthy young men (for control of streptococcal epidemics) the incidence of anaphylaxis has been quite low falling well below one tenth of 1%. Penicillin administration in venereal disease clinics, however, to populations with considerably greater previous penicillin exposure has resulted in a several fold greater incidence of serious reactions. When given to patients without a family or personal history of allergic reactions it is likely that acute anaphylaxis would occur in less than 1% of patients given the drugs you listed. Though infrequent such reactions are certainly clinically significant when they occur.

Should the physician's presence be required in the office when injection are administered ? as a minimum requirement it would seem important that all patients receiving such injections have prior, careful screening by the physician and that the individual giving the injection be fully prepared to institute emergency treatment of anaphylaxis. It would also seem desirable to require patients to remain in the office for observation for a period of 15 to 30 minutes following the injection. (Joseph E. Johnson, III, M. D., Bowman Gray School of Medicine, Winston, Salem, N.C.—(*J. A. M. A.*, November 5, 1973).

TREATMENT OF HYPERTHYROIDISM WITH RADIO-IODINE*

(Review of the cases of 96 patients treated between 1967 and 1972)

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INTRODUCTION:—There are three methods of treatment available in all major institutions for the control of hyperthyroidism, *viz.* (1) antithyroid drugs, (2) subtotal thyroidectomy, and (3) Radioiodine. While each method has its own advantages and disadvantages, Radioiodine treatment is becoming increasingly popular in recent years for treating the majority of hyperthyroid patients, due to its simplicity, effectiveness and cheapness. The common objection to its use is its potential carcinogenic effect. The latent period of carcinogenesis due to any kind of ionising radiation is usually very long. Therefore, if children and young patients are not subjected to Radioiodine treatment, the theoretical risk of carcinogenesis in the thyroid gland becomes negligible. Radioiodine is in use as a therapeutic agent since 1942. More than 200,000 patients have been treated throughout the world and yet no proven case of thyroid cancer due to radioiodine has been noted. In the light of experience, some centres have completely relaxed the age-limit, for radioiodine treatment. The only contraindication in a patient now is its use for an expectant mother.

However, the real and more important drawback in this method of treatment, as reported in recent literature is a higher incidence of myxœdema compared to cases treated by surgery or antithyroid drugs.

In the present study, the cases treated with *Ra-I* at MNJ Cancer Hospital and Radium Institute Hyderabad, during a period of 5 years, are reviewed. An attempt is made to find out the effectiveness of the dose of *Ra-I* in controlling hyperthyroidism by following a simple method of dose calculation.

Material and methods.—96 patients suffering from hyperthyroidism are included in this series who were treated with *Ra-I* between 1967 to 1972. Patients with euthyroid goitres, differentiated carcinoma of thyroid and lingual goitre, who received *Ra-I* treatment for indications other than hyperthyroidism, are not included in this series. The hyperthyroid patients were referred to this hospital from all other hospitals in the twin-cities and a few from private practitioners also. The clinical examination, investigations, treatment and followup examination for all cases, were conducted by one and the same team, consisting of a Professor, an Assistant Professor and a senior technician.

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* Specially contributed to the 'ANTISEPTIC'.

TABLE I

Showing age and sex incidence

Age	Males	Females	Total	
Below 30 years	2	8	10	The minimum age of patients below 30 was 27 years.
30 to 40 ,,	14	36	50	
41 to 50 ,,	8	18	26	
51 to 60 ,,	3	7	10	

Diagnosis:—All the patients had signs and symptoms of hyperthyroidism. The clinical diagnosis was supported by laboratory investigations. Based on the severity of clinical findings, the cases were divided into three groups:—

TABLE II

Showing the grouping according to severity

	Males	Females	Total
Mild	5	22	27
Moderate	15	39	54
Severe	7	8	15

Tracer study:—All the patients had undergone *Ra I* uptake study in 2 hours, 6 hours, and 24 hours. The usual tracer dose was 5 microcuries. The uptake in the local euthyroid population was standardised in the range of 15% to 45%.

TABLE III

Showing results of uptake

Below 50%	—	16
51% to 60%	—	23
61% to 70%	—	14
71% to 80%	—	15
81% to 90%	—	15
Above 90%	—	13

There was no significant relationship between the clinical severity of the disease and the actual uptake of Radioiodine by the thyroid. While some mild hyperthyroids had a high uptake, a few severe hyper thyroids had an uptake of 50 to 60% only. The same isotope of *Ra I* (I^{131}) was used both for tracer studies as well as for therapeutic administration in all cases.

Previous treatment:—32 patients had taken anti-thyroid drugs for periods varying from one month to several years. 64 patients had not received any treatment previously. No patient in this series was treated surgically before *Ra-I* treatment nor any case treated with *Ra-I*, had undergone surgery later.

Thyroid enlargement:—Thyroid size was measured in all patients. A length of 4 cm. from above downwards and a breadth of 5 cm from side to side was taken as normal. By palpation and measurement of the size, the weight of the thyroid gland was estimated. The patients were divided into three groups according to the degree of enlargement.

TABLE IV

Showing the degree of enlargement

No enlargement	—	5
Slight enlargement	—	38
Moderate enlargement	—	53
Gross enlargement	—	nil.

Out of 91 enlarged thyroids, 88 were diffuse and soft and 3 had one or more nodules in their substance. ***Administration of RaI*** **:** All the patients were given *RaI* by the oral route as out-patients. For prescribing the dose of *RaI*, there are mainly three methods in vogue at different centres.

1. ***Calculated dose method*** :—The thyroid mass is estimated; the ratio of the tracer dose taken up by the thyroid and the effective half life of *RaI* in individual cases are taken into consideration. Dose of *RaI* is calculated in millicuries with using the formula :—*Dose of RaI in Mc* $= \frac{0{\cdot}59\ M,}{UT}$ where M = Mass of thyroid in grams, Mx U = percent uptake and T = effective half life in days. The aim is to deliver 8500 rads to the thyroid gland. Approximately it works out to 160 *Uci* of *RaI* per g. of the estimated weight of the thyroid.

2. ***Fractionated dose method*** :—Repeated small doses are given at regular intervals, until a detectable effect on the thyroid function is achieved. Since the action of a dose continues for about 3 months, the interval between repeated doses has to be impracticably long and the patient suffers from persistant signs and symptoms of the disease for a period longer than necessary.

3. ***Simplified dose method*** :—Patients without palpable thyroid are given 5 *mc.* those with slight enlargement 6 to 7 *mc.* and those with still larger goitres, anything upto 25 *mc.*

In the present series of cases, the last method was adopted with comparatively smaller doses, depending on the size of thyroid enlargement as follows.

TABLE V

Showing the size of the enlargement

No enlargement	—	5	patient	—	2 mci
Slight enlargement	—	38	,,	—	3 to 4 mci
Moderate enlargement	—	53	,,	—	5 to 7 mci

Number of doses administered :—A single dose to 62 patients, 2 doses to 23 patients, 3 doses to 8 patients, and more than 3 doses to 3 patients.

For those patients who required a second or third dose of *RaI*, the later doses were about half of the first dose. No one had any adjuvant therapy with medicines.

Result:—All the patients were called for follow up regularly every 12 weeks after the first dose of *RaI* and their condition was reviewed clinically. *RaI* tracer study was performed in a few cases. After *RaI* therapy, there is sometimes loss of correlation between the usual laboratory parameters which measure thyroid function and the clinical state of the patient. The results were based on remission of signs and symptoms, including regression in size of goitre. No patient had any adverse somatic effect, nor there has been any suspicious of decreased fertility. In fact 4 patients have conceived after *RaI* treatment and have given birth to normal babies. Out of the 96 treated patients 6 did not attend the followup. The results of treatment are analysed in 90 patients who attended followup:

TABLE VI

Showing results of followup of 90 patients

In the first followup		
Euthyroid	—	46
Partly improved	—	26
Persistent Hyper	—	11
Hypothyroid	—	7

Out of 46 who have become euthyroid on first follow-up, 40 have remained euthyroid in subsequent visits also, one had signs of relapse and was re-treated and 5 became hypothyroid.

Partly improved in 12 weeks:–(26 patients)—Of these 3 became euthyroid later, 17 were euthyroid after further treatment, in 3 cases the improvement remained incomplete, one was hypothyroid after further treatment and 2 without further treatment.

Persistent hyperthyroid in 12 weeks:—(11 patients): were all retreated 10 became euthyroid, one improved partly and no one was hypothyroid. Hypothyroid in 12 weeks (7 patients) —3 had only transient myxœdema and they became euthyroid later spontaneously. 4 have remained hypothyroid and require substitution treatment with thyroid tablets. No one became hyperthyroid in this group.

TABLE VII

Showing results of treatment

	Euthyroid	Partly improved	Persistent	Hypo.
On first F. U :	46	26	11	7
Later	Remained euthyroid : 40	Euthyroid : 3	Retreated Euthyroid : 10	Euthyroid : 3
	Relapse, retreated : 1	Retreated Enthyroid : 17	Partly improved : 1	Hypo : 4
	Hypothyroid : 5	partly better : 3 Hypothyroid : 3		Hyper : Nil

Discussion.—In the final analysis of the data, it will be seen that out of 90 patients followed up after treatment, 74 were ultimately euthyroid (82·3%), 4 had improved partly (4·4%) and 12 developed myxœdema (13·3%). It is not unreasonable to expect that those patients who have improved partly, can also be controlled fully with further treatment. As far as effectiveness of the treatment method is concerned, the success rate was 51% in 12 weeks which later rose to 82·3%. It may be again pointed out in that the doses of *Ra-I* administered to our patients, were comparatively smaller than the doses administered by other centres. If the first dose had been larger, the cure-rates would have been higher in a shorter period. Some centres have claimed a success rate of 85% in 2 months with a single dose of *Ra-I*.

Regarding development of myxœdema, 13·3% developed this complication. The period of follow-up in this series of cases varied from 9 months to 4 years. It is possible that the incidence of myxoedema after *Ra-I* treatment may further rise as we continued the follow up in future years. It will be of interest to note that inspite of our attempt to reduce the incidence of myxœdema, by administering smaller doses of *Ra-I* for the control of hyperthyroidism, the figures for this complication are as high as the figures reported in other centres

TABLE VIII

Showing results of *Ra-I* treatment

Euthyroid :	74 (82·3%)
Partly improved :	4 (4·4%)
Myxœdema.	12 (13·3%)

Acknowledgement :—My grateful thanks are due to Dr. U. S. N, Raju, Assistant Professor, Sri M A. Qadeer, Chief Radiographer who helped me in collecting and analysing the data. I am grateful to Dr. V. V. Subba Rao, Superintendent, M. N. J. Cancer Hospital, Hyderabad, for according permission to publish this paper.

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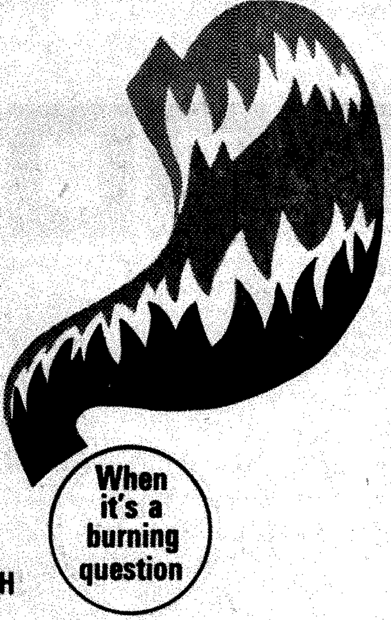
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A COMPARATIVE STUDY OF CHLORPROPAMIDE AND GLIBENCLAMIDE IN MATURITY-ONSET DIABETES MELLITUS*

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INTRODUCTION:—The finding of hypoglycæmic activity in carbutamide in 1955 heralded a new era in the management of Diabetes mellitus. During the last two decades oral hypoglycæmic agents have afforded great relief to thousands of diabetics. Though found to be of limited value, their discovery promoted the search for better compounds with greater efficacy and safety. The latest result of this search is glibenclamide which is now being used in the treatment of diabetes mellitus.

Clinical studies with this new drug in India indicate that glibenclamide is an effective oral hypoglycæmic agent and well tolerated and is reported to possess a higher hypoglycæmic potency on a milligram basis.

In order to ascertain if glibenclamide did possess any merit over other sulphonylurea compounds presently in use, a clinical trial was made with chlorpropamide (*Diabinese,** Pfizer) for comparison, since it has been found in long-term studies to be the safest oral sulphonylurea with the highest clinical success rates and the lowest failure rate[4] .

Material and Methods.—Recently diagnosed adult patients with maturity-onset, nonketotic diabetes mellitus who had failed to respond to management with diet alone formed the material for the study, most of them being drawn from the poor and middle class and very few of them were obese.

Subjects with known hypersensitivity to sulphonylurea drugs, history of diabetic ketosis and evidence of liver or renal dysfunction, and those receiving thiazide diuretics were excluded from the study, as also pregnant women.

Each patient was subjected to a complete clinical examination and routine laboratory tests to exclude hepatic or renal disease. A diet suited to the patient's caloric requirements (according to height, body-weight and sex) was also advised.

During the first four weeks of the study the patients were examined at weekly intervals in the outdoor diabetic clinic and thereafter every month for a total period of 6 months. Patients were allotted at random to Glibenclamide or chlorpropamide therapy. The dose of glibenclamide was 2·5 to 15 mg.; that of chlorpropamide, 125 to 500 mg. The total daily dose was given only once daily after breakfast. The initial dose was selected according to the severity of the diabetes and subsequently adjusted according to the response. At each of the follow-up examinations a record was kept of the symptoms, body-weight, fasting blood and urine-sugar levels, and post-prandial blood and urine sugar two hours after taking 50 g. of glucose orally.

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*Specially contributed to the 'ANTISEPTIC'.

TABLE I

Showing the Criteria of evaluation of therapeutic response.

Grade	Blood glucose, mg./100ml.		Glycosuria g./24hr.
	Fasting	Post-prandial*	
Excellent	≤110	≤150	Nil
Good	111-130	151-180	< 5
Fair	131-160	181-200	5+
Poor(Failure)	> 160	> 200	10+

* 2 hours after 50 g. glucose had been taken orally.

TABLE II

Showing the Response to therapy.

Grade	Number of patients.	
	Chlorpropamide	Glibenclamide
Excellent	28	28
Good	2	2
Fair	0	0
Poor	1	1
Total	31	31

TABLE III

Showing the effect of therapy on mean serum cholesterol level (mg. 100 ml)

	Chlorpropamide N = 31	Glibenclamide N = 31
Pre-treatment	221	230
Post-treatment	198	202
Mean change ± SEM	-23±4·06	-28±2·85
Significance*	P<0·01	P<0·01

* Paired t-test

Side-effects were recorded in volunteering patients along with their severity, date of onset, treatment and outcome. Laboratory tests carried out for safety evaluation included hæmogram, blood urea, routine-urine examination, serum bilirubin, serum alkaline phosphatase, SGOT and SGPT. The transaminases were estimated monthly during the first 3 months and then at the end of six months. Serum cholesterol was also ascertained before and after treatment.

Response to treatment was evaluated on the basis of symptomatic relief, clinical improvement, and control of glycosuria and blood-sugar levels.

RESULTS;—Sixty-two patients (48 males and 14 females) were studied. In forty-eight of them (77%) the onset of diabetes was in the 4th or the 5th decade of life. With regard to body weight, 23 (37%) were of normal weight 34 (54%) were below normal, and 5 (9%) were overweight for their height, age and sex.

In the order of frequency the symptoms consisted of weakness (70%), polyuria (41%), increased appetite (40%), loss of libido (11%), polydipsia (9%), pruritus (8%) and peripheral neuropathy (8%).

Response to treatment, *i. e.* control of diabetes, was graded as *Excellent*, *Good*. *Fair* and *Poor* (failure) according to the criteria set out (*see* Table I, p. 488). These criteria are somewhat more stringent than those described by Fuchs, (1973).

According to this classification the response to the two drugs was found to be identical (*see* Table II, p. 448). Both the drugs brought about approximately 10% fall in serum cholesterol which was statistically significant ($P < 0\cdot01$) (*see* Table III, p. 448).

No side-effects were noted with either drug. Similarly, no adverse effects were noticed on the hæmogram, blood chemistry, urinalysis and liver function tests. The transaminases were lowered by 5 to 15 units in 4 patients on chlorpropamide and 5 patients on Glibenclamide. Weight-gain of 0·5 to 2·0 kg. was observed in 12 patients (38%) on Chlorpropamide and 18 patients (58%) on Glibenclamide ($X^2=5\cdot2; P < 0\cdot05$).

Discussion.—This study was to ascertain whether the higher milligram potency of glibenclamide offers any advantage in terms of clinical efficacy, *i.e.* the percentage of maturity-onset diabetic patients showing excellent or good response. Although results with glibenclamide in the present study are better than those obtained by other Indian workers (Solanki, *et al*, 1971; Chhetri *et al*, 1970; Viswanathan, 1970; Patel and Dhirwani, 1970; Tripathy *et al*, 1971), who obtained excellent or good response in 55 to 72% of patients, they do not show Glibenclamide to be more efficacious or better tolerated than Chlorpropamide.

In two studies reported from South Africa (Seftel, 1969; Schneider and Lopis, 1969) Glibenclamide was compared with Chlorpropamide in the same 56 patients; Chlorpropamide was superior to Glibenclamide in 23, similar to it in 24, and inferior to it in 9. If these data are analysed by McNemar's paired Chi-square test, a significant preference to be noted in favour of Chlorpropamide ($X^2 = 5\cdot3; P < 0\cdot05$).

The foregoing results suggest that there is little advantage in switching over patients well stabilized on Chlorpropamide to Glibenclamide. However, occasional patients who may not respond satisfactorily to Chlorpropamide may be given a trial change over to Glibenclamide and *vice versa*.

The higher milligram potency of Glibenclamide, while it does not seem to offer any greater clinical efficacy, is likely to carry a potential risk by producing hypoglycæmic reactions. These were not however, observed in the present study but other Indian investigators have reported such reactions in 6·6% to 24% of the patients. They had treated with this drug (Solanki *et al*, 1971; Chhetri *et al*, 1970; Tripathy *et al*, 1971). Consequently, the authors agree with the opinions expressed elsewhere that Glibenclamide should not be considered as the first-choice sulphonylurea (Annotation, 1971) but is probably best used for a second or third line of attack in patients whose blood-glucose control is inadequate with other methods of treatment (*Editorial*, 1971).

Summary.—Sixty-two maturity-onset diabetics, randomly divided into two groups of thirty-one each were treated with Glibenclamide and Chlorpropamide, respectively, for six months. Control of diabetes was assessed from symptomatic relief, fasting blood-sugar, post-prandial blood-sugar and glycosuria.

Both drugs produced *excellent* to *good* response in 97% of the patients and both were well-tolerated. Our results are compared with those in relevant literature. We feel that both these sulphonylurea compounds are similar to each other in their clinical efficacy and that Glibenclamide shows no significant advantage over Chlorpropamide in the management of maturity-onset diabetes mellitus.

Acknowledgement.—We wish to record our grateful thanks to Prof. A. Paul, former Principal, Superintendent, for according permission to do this work, and to the stipendiary House Staff of the Department of Medicine, Dr. Pradip Bose, Dr. Amit Biswas and Dr. Jayasree Bose, of the N. R. S. Medical College Hospital, for their useful help. We also wish to express our appreciation to the Nursing and to the Paramedical staff who assisted us at various stages of this investigation.

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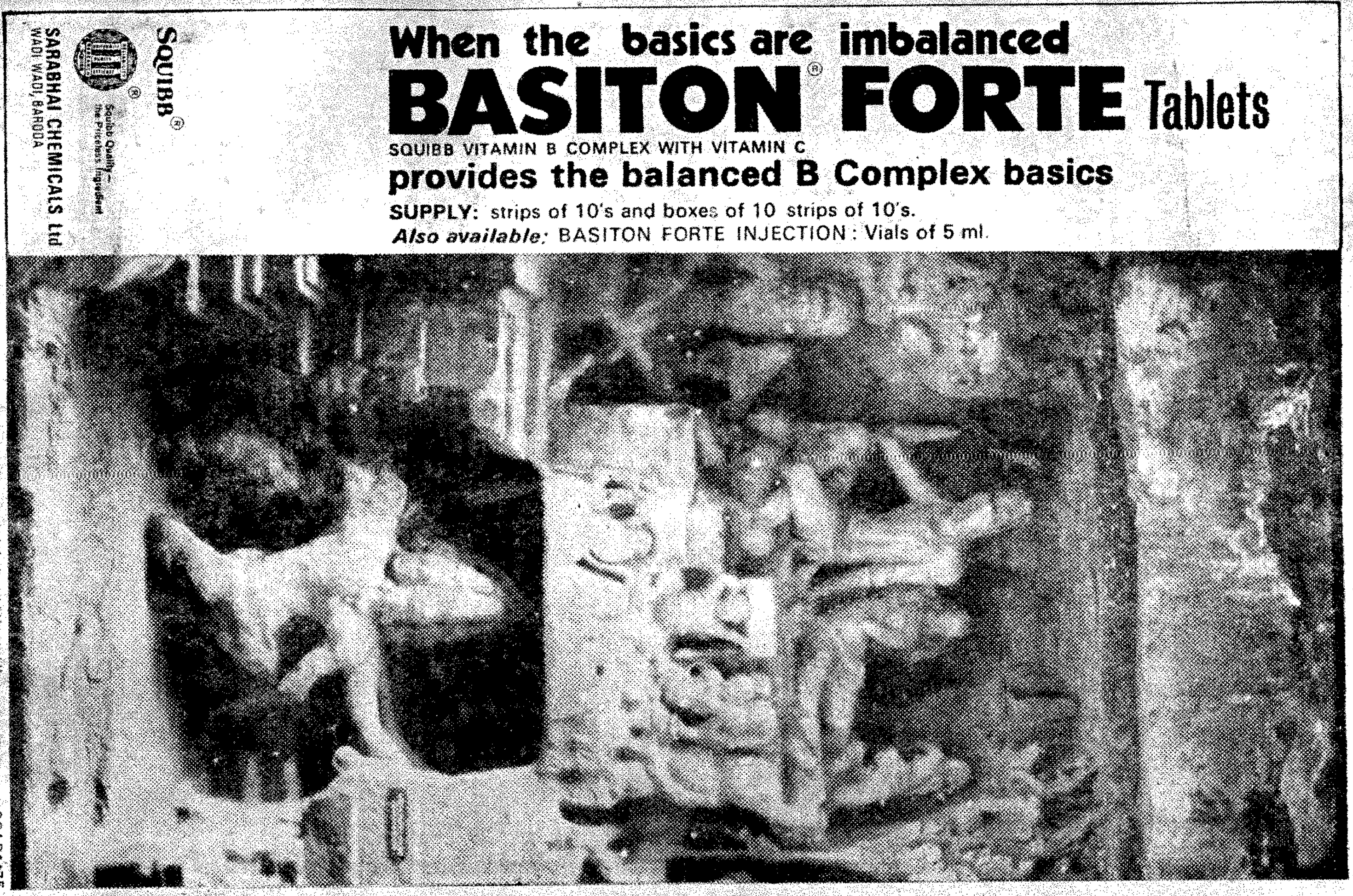

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T-PAS/PO/62

TRIAL WITH THE INDIGENOUS DRUG ALOES COMPOUND IN INFERTILITY*

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THE problem of infertility is as old as is the World. Numerous descriptions in the Puranas about King Dasaratha and Dilip performing Yagas for the sake of begetting children are well known to all Indians. Equally well known is the fact that their Queens conceived after taking the Prasaadam from the Lord's temple. Though the actual cause of the sterility in the puranic characters and the mode of action of the Prasaadams is not known, the sterility was invariably believed to be due to some curse.

Even in this modern era of tremendous scientific advances, we have not fully understood the subtle biochemical phenomena leading to the successful fertilization and implantation of the ovum. There are a group of couples in whom there is no obvious cause for the barren marriage detectable by the gynaecologist, but with reassurance and reasonable waiting, nothing fruitful has been gained. Again there are others, who in the opinion of the specialist, have very remote chances of conceiving but who surprisingly enough, promptly conceive, at times, even without treatment, though such cases are not very frequent.

Surgery plays a very limited role in the management of the problem of infertility. Epidydimo-vasostomy for a vas obstruction and tuboplasty operation for tubal block are rarely performed because of the poor success rate. Medical treatment is of equally limited significance until recently, due to lack of availability of suitable and effective drugs. Testosterone for treating all types of male infertility and œstrogen and progesterone for nearly all kinds of female infertility were the only available drugs. Of course, recently Clomid and

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*Specially contributed to the 'ANTISEPTIC'.

Gonadotrophin have come into vogue but these drugs are not yet freely and easily available in India for routine use.

At this juncture, any product claimed to be useful for curing infertility should therefore, be quite welcome both to the patient and to the gynæcologist.

An aloes compound (*Alarsin*) is an indigenous drug which is found to show fertility-promoting properties in several research trials. It is claimed that this compound regulates menstrual irregularities and improves fertility in women with unexplained barrenness. Trials conducted in various hospitals in India have shown encouraging results. Hence, it was thought worth-while undertaking a trial with the Aloes compound in our infertility clinic also.

Pharmacology of the drug.—Each tablet of Aloes compound contains:—Aloes (Aloes indica): 60 mg., Bol (Myrrh): 60 mg., Loha Bhasma (Iron Bhasma): 30 mg., Manjishta (*Rubia cordifolia*): 30 mg., and Hurmal (*Peganum hurmala*): 30 mg.,

Aloes:—Is an appetizer and laxative and by stimulation of the pelvic circulation, causes congestion of the uterus and acts as an emmenagogue.

Myrrh:—Potentiates the action of aloes.

Manjishta:—Has anti-inflammatory properties and acts as an uterine sedative.

Hurmal:—Is an antispasmodic, sedative and emmenagogue, useful in amenorrhœa and dysmenorrhœa. Manjishta and Hurmal are supposed to soothen the anxiety states of these sterile women. In India, before the introduction of hormones, aloes has been used with myrrh and/or iron for menstrual disorders.

Material and methods.—This study was started in June, 1971. The cases were selected from the Gynæco, outpatient department of the Government Women and Children Hospital, Madras. Both primary and secondary sterility cases were included in the trial. The female partners were subjected to the routine investigations for sterility. Endometrium for study was obtained by doing an endometrial biopsy on the 1st day of the period as an outpatient. If there was associated dysmenorrhœa, dilatation and curettage were done. Women with tubal block, azoospermic husbands and women whose husbands were not willing for seminal analysis were not given this drug. Women who were otherwise normal, those with irregular cycles and oligo-ovulation and anovulation formed the bulk of the material in this study. The recommended dosage of the compound is 2 tablets thrice daily and at the beginning we were giving this dose. As some of the patients complained of griping abdominal pain, we reduced the dose to 4 tablets per day. The medication was stopped during periods to be restarted after the cessation of flow and also when the periods were delayed and pregnancy was suspected.

RESULTS :—During the one year period from June 1971 to May, 1972, 208 patients attended the infertility clinic. Of these, the first 133 cases form the trial group (*Group-I*) while the latter 75 cases form the control group (*Group-II*). The trial patients were put on Aloes Compound while the control group received placebo tablets.

Aetiological factors :—For assessing the ætiological factors of infertility, the total number of cases were considered. 35% were due to anovulation and in 20%, there was tubal block. 12% of the husbands were azoospermic, while 6% had oligospermia (Sperm count of 19 million or less). Data about the trial group are given in (*see* Table I, *p. 454 & 455*).

Trial group :—Of the 133 cases in *Group-I*. 77 or 58·5% dropped out even before the investigations could be completed and 56 or 41·5% attended the clinic to get the tablets after the tests had been completed. In this group, 77·5% had primary sterility and 22·5% secondary sterility.

Age distribution :—18% of the patients were under 20 years; 13·5% over 30 years and 68·5% belonged to the 21 to 30 age group.

Menstrual rhythm :—77·5% had regular menstrual cycles and while in 22·5% they were irregular.

Duration of marital life :—13·5% had been married for 3 years or less, 19·5% over 10 years, while 67% had been married for 4 to 10 years.

Tubal patency :—20% had blocked tubes while in 80% they were patent.

Endometrial histology :—65·5% showed a secretory pattern while in 34·5% it was proliferative. In one patient, no endometrium could be obtained. Seminal analysis of the male partner :—83% were normal; 7·2% azoospermic and 9·6% oligospermic.

Duration of medication :—The duration of drug-administration ranged from 10 days to one year. 25·6% took the tablets only for one month or less; 34·5% from 1 to 3 months; 25·6% from 3 months to 6 months and only 14·5% continued to take it beyond 6 months.

Side-effects :—Some patients complained of griping abdominal pain with 6 tablets per day but no side-effects were noted when the dosage was reduced to 4 tablets. A few complained of loose motions. Patients whose menstrual flow was already moderate or on the profuse side tended to have a still increased flow which was bound to be troublesome. Apart from these, there were no major side-effects.

TABLE

Total cases	Age group			Primary Sterility	Secondary Sterility	Periods	
	20 & above	21—30	30 & above			Irregular	Regular
133	18%	68·5%	13·5%	77·5%	22·5%	22 5%	77·5%
Drop out : 77	58·5%	—	—	—	—	—	—
Taking regularly 56	41·5%	—	—	—	—	—	—
	Follow up — 1 year			—	—	—	—
Control cases : 75	30%	65 5%	4·5%	86·6%	13·4%	33·3%	66 7%
Drop out : 50	67%	—	—	—	—	—	—
Coming regularly 25	33%	—	—	—	—	—	—
	Follow up 6 months			—	—	—	—

Pregnancy rate :—Out of the 56 patients, who took the Aloes Compound, 11 conceived, giving a gross pregnancy rate of 19·6% ; of these 56, 19 had taken the drug for less than a month and one conceived. After excluding these, the corrected pregnancy rate was 10 out of 37 or 27%.

Analysis of the clinical data of the 11 women who conceived is given in (Table II, *p. 456*).

One conceived within one month of taking the tablets ; 6 within 3 months ; 3 in 6 months and one after 8 months.

Marital status:—Four had been married for 3 years, 5 between 3 and 9 years and the remaining 2 had been married for 11 and 12 years respectively.

Type of endometrium and pregnancy :—Two patients with a proliferative endometrium conceived while the others had a secretory pattern.

Menstrual rhythm and pregnancy rate :—Of the 56 patients, 39 had regular and 17 irregular cycles. The pregnancy rate in patients with regular cycles was 20·5 and irregular cycles 12·5%.

Control group :—There were 75 patients in the control group. Only 25, *i.e.*, 33% came regularly for taking tablets and 67% dropped out before investigations could be completed. Of the 25 who came regularly 3 or 12% conceived. The comparative data between the trial and control groups are given in (*see* Table I).

I

Tubes		Endometrium		Husband			Duration of infertility		
blecked	patent	secre-tory	prolife-rative	normal	azoos-permia	oligos-permia	3 years	4—10 years	over 10 years
19%	81%	65 5%	34·5%	83·2%	7·2%	9·6%	13·5%	67%	19·5%
—	—	—	—	—	—	—	—	—	—
—	—	—	—	—	—	—	—	—	—
Not done 39 cases		No endometrium in 1 case		Not done in 50 cases Necrospermia – 3·6%				—	—
21·3%	78·7%	55%	45%	70·7%	20·8%	8·5%	17·3%	75%	7·7%
—	—	—	—	—	—	—	—	—	—
—	—	—	Not done in 27 cases. No Endometrium in 2 cases.	—	—	—	—	—	—
Not done 28 cases					Not done in 27 cases		—	—	—
			Tuberculosis Endometrium 1 case		—	—	—	—	—

Discussion.—Kusum Gupta has tried out the Aloes Compound in the sterility clinic of S. N. Hospital, Agra on 250 patients and reported a fertility rate of 46% in 100 normally menstruating women and 39% in 150 with disturbed menstrual function. Jhaveri *et al* reported a pregnancy rate of 52% in the trial series as against 20% in the control. The pregnancy in primary sterility and secondary sterility in the trial series was 54% and 46% respectively as compared to 16% and 24% in the control series. Roshan R. Bulsara found that 30 out of 45 primary sterility and 1 out of 5 secondary sterility cases conceived when treated with Aloes Compound, thyroid and Lugol's iodine solution giving an incidence of 66% and 20% respectively. Our pregnancy rate of 27% is low as compared with these studies. The reason may be that our patients were very irregular in taking the tablets. In the present trial, even though there was no conscious selection of patients for each group, there is a slight difference in the quality of the patients as will be seen from *Table*–I, *i.e.*, 20·8% azoospermia in *Group–II* as against 7·2% in *Group*-I, 33·3% irregular cycles in *Group–II* as against 22·5% in *Group–I*; 45% proliferative pattern in *Group–II* as against 34·5% in *Group–I*. But this was purely coincidental. All the same, the pregnancy rate of 27% with Aloes Compound and 12% without it goes to show that this drug has had some favourable influence in sterility cases. Again 2 anovulators conceived. With the lack of availability of other ovulation stimulators, it is worthwhile trying this drug in such cases.

TABLE II

Sl. No.	Name	Age in yrs.	Primary sterility	Relative sterility	Menstrual Cycle	Tubal function	Endometrium	Duration of the tablets in months)	Husbands seminal analysis (sperm count in millions
1	Smt. N. Married—4 years	19	—	Relative sterility	Regular	Patent	Secretory	3	38
				Delivered on 6-8-1972—live female baby					
2	Smt. R. Married—7 years	20	Primary sterility	—	Regular	Patent	Secretory	2	58
				Patient delivered a live female baby					
3	Smt. R. Married—3 yrs.	22	Primary sterility	—	Regular	Patent	Secretory	6	52
4	Smt. J. Married—11 yrs.	32	—	Relative sterility	Regular	Patent	Secretory	2	48
				2 years back—Vas—recanlisation done. Hysterosalpingography—Patent					
5	Mrs. S. B. Married—3 yrs.	20	Primary sterility	—	Irregular	Patent	Proliferative	2	62
6	Smt. S. Married—3 yrs.	19	Primary sterility	—	Irregular	Patent	Proliferative	3	62
7	Smt. V. Married—6 yrs.	29	Primary sterility	—	Regular	Patent	Poor secretory	6	40
				Aborted during the 2nd month					
8	Smt. B. Married—8 yrs.	25	Primary sterility	—	Regular	Patent	Secretory	1	38
					Delivered				
9	Smt. G. Married—3 yrs.	23	Primary sterility	—	Regular	Patent	Poor secretory	8	68
				3 months—missed abortion					
10	Smt. M.	30	Primary sterility	—	Regular	Patent	Secretory	2	—
11	Smt. S.	21	—	Relative sterility	Irregular	Patent	Poor secretory	4	58
				CONTROL GROUP					
1	Smt. R. B. Married—3 yrs.	23	Primary sterility	—	Regular	Patent	Not done	No tablets	45
2	Smt. L. Married—2 yrs.	24	Primary sterility	—	Regular	Patent	Proliferative	1	65
3	Smt. L. Married—4 yrs	20	Primary sterility	—	Regular	Patent	Not done	No tablets	Conceived before seminal analysis.

Kusum Gupta claims an improvement of menstrual function in 44 to 66% of cases. But in our trial, the menstrual rhythm was not appreciably altered with the dose used. Probably higher dosages, might have been more helpful.

Acknowledgement.—Our grateful thanks are due to Manthan (Research Division of *Alarsin* Pharmaceuticals, Bombay-1) in particular to Mr. K. M. S. Chetty for providing adequate supplies of the drug used in this clinical trial.

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CAUTION: CHAMPAGNE CORK MAY BE HAZARDOUS TO SIGHT

You're celebrating during the holidays, and—pop out flies the champagne cork.

Well, just make sure it isn't pointed toward yourself or some one else. That cork is a dangerous missile.

Sherwin H. Sloan, M.D., an ophthalmologist, said he began noticing a series of serious eye injuries at the Jules Stein Eye Institute at UCLA Medical School. All the victims had been struck in the eye by champagne corks. All but one were men; men seem to do most of the champagne opening—and most had been struck in the left eye, said Dr. Solan. He theorizes that the left eye is struck most often because of the bottle's position while being opened by a right handed person.

The results were severe:

Of 14 cases treated at the institute in a recent three-year period, three patients lost the sight of the injured eye. Three others have considerable permanent vision loss due to injuries to cornea or macula. All 14 had corneal abrasions, 10 had hyphemas, 3 developed permanent macular damage, one had recurrent hyphemas, and 2 sustained severe retinal detachements.

Dr. Sloan describes the injury as blunt trauma to the cornea, related to the speed of the cork. In 1967 British investigators Desmond Archer, M.B., and Nicholas Calloway, M.B., reported nine similar eye injuries. They estimated that a champagne cork may be backed by pressures of up to 100 atmospheres.

(In what must have been one of the more enthusiastically begun scientific experiments, Dr. Archer and Calloway then opened a series of champagne bottles, pointing them straight upward. Some of the corks reached altitudes of up to 40 feet, they reported in the *Lancet*. They also offered a safety suggestion: opening the bottle by the French method, which involves placing a towel over the cork).

All of the California victims had been struck by the newer plastic corks, but the injury with a genuine cork would be similar, Dr. Sloan said.

He offers two safety suggestions:—

The first is for cautionary labelling, Some manufacturers do place a warning on champagne bottle labels, but it should be on all bottles, and the lettering should be larger.

The second suggestion is obvious: greater care.

Dr. Sloan presented his findings at the annual, meeting of the American Academy of Ophthalmology and Otolaryngology in Dallas. (*Medical News* in *J. A. M. A.*, December, 23, 30, 1974).

INTRAVENOUS PETHIDINE AND MEPHENSIN FOR REDUCING FRACTURES AND DISLOCATIONS*

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INTRODUCTION :—In most of the developing countries, modern anæsthetic facilities are limited to large hospitals and therefore doctors posted at the periphery cannot often work to the best of their ability, because of the lack of such facilities.

In bigger hospitals where all facilities are available, the preparation of an emergency case for the administration of general anæsthesia necessarily entails delay.

It was with the twin aims of avoiding delay and clearing off the work load efficiently, even in outlying dispensaries that we tried the use of Pethidine and Mephensin in fracture and dislocation cases, which constitute a substantial part of the emergency load of all hospitals.

Material and methods.—In the series reported in this paper intravenous pethidine and mephensin were administered to 56 otherwise healthy patients of various types of uncomplicated traumatic fractures and dislocations. Patients in the extremes of age and those of poor risk were discarded. The youngest patient was a 14 year old boy with a supracondylar fracture and the oldest was a 61 year-old lady with Colles' fracture. (*see* Table I).

TABLE I

Showing the age incidence

Age groups in years	Total No. of patients	Males	Females
0—10	Nil	Nil	Nil
11—20	1	1	Nil
21—30	10	6	4
31—40	16	10	6
41—50	22	9	13
51—60	6	4	2
61—70	1	—	1
Total	56	30	26

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* Specially contributed to the 'ANTISEPTIC'.

Initially the first ten patients were treated by the first two of us at Allahabad but later, other authors joined on the study, as one of the authors (R.C.G.) was transferred from Allahabad to Kanpur. Patients were treated irrespective of the nature of food taken, solid or liquid or the time when it was taken.

Facilities for intravenous infusion, endotracheal intubation, oxygen and bellows for artificial respiration were kept available and ready at every place.

In all the cases 75 to 100 mg. of pethidine and 10 ml. of a 10 per cent solution of mephensin mixed with 10 to 50 ml. of normal saline were given slowly by the intravenous route in 2 to 5 minutes in various dilutions (Table II).

TABLE II

Showing the complications met with

Complications	Dilutions	
	2·5% to 5% (24 patients)	2% or less (32 patients)
Thrombosis of the vein	13	4
Vomiting	1	1
Macroscopic hæmoglobinuria	1	—
Microscopic hæmoglobinuria	12	3
No hæmaturia or hæmoglobinuria	11	29

The pulse rate, respiration and blood-pressure were recorded before manipulation, immediately after and two hours after the manipulation. Levels of consciousness and muscle relaxation during reduction were also noted. Next day, when they came for the check up, they were questioned for the occurrence of any side-effects. They were also asked to collect the urine passed by them during 24 hours of the reduction.

Observations.—Though the youngest patient was 14 years old, the largest number of patients were in their third, fourth and fifth decades of life (85·7%). Those in their sixth and seventh decades were only 12·5% of the total (*see* Table I). The proportion of males to females was 30 : 26.

Out of the 56 patients, 45 had simple fractures; 36 had Colles' fracture; 5 had fractures of both bones of the forearm and two had Pott's fracture of the ankle while one each had Smith's fracture and supracondylar fracture of the humerus. Two patients had compound fracture of the bones of both legs. Six patients had dislocations which included 2 each of the shoulder and elbow and one each of the hip and temporo-mandibular joint. Three had fractures of the shaft of the femur which were reduced and put in traction.

Immediate and delayed complications were noted in all patients. In the first group of 24 patients mephensin was injected in various strengths varying from 2·5 to 5 per cent solutions and in the second group of 32 mephensin was injected in 2% solution or less (*see* Table II).

RESULTS:—Thirty-six patients, within 5 minutes of getting intravenous pethidine and mephensin became drowsy but were rousable and answered ordinary questions throughout the period of manipulation, They did not feel any pain or discomfort during manipulation. Out of seven patients, who were over the age of 50 years, three became unrousable for about 10 minutes. They, however, recovered almost within half an hour. They were fully relaxed and did not remember anything about the manipulation. Fifteen patients remained alert and felt pain as shown by their facial expression and they also complained verbally during a manipulation but did not withdraw the injured limb. In the case of 2 patients supplementation with open ether anæsthesia was found necessary. There was no appreciable change in pulse, blood-pressure and respiration rates in 52 patients. In four, the pulse rate increased by 15 to 20 per minute; blood-pressure fell by 15 to 20 mm., of Hg. and the respiratory rate slowed down to 10 per minute. All the parameters became normal within half an hour without any specific treatment.

Complications.—Only one of the 56 patients suffered from serious complications. This patient was an young man of 25 suffering from a simple fracture of the femur. Drugs were administered in the right antecubital vein at the bedside in order to reduce the fracture so that it could be fixed in traction. After the injection was given, the patient complained of severe pain in the whole of his right upper extremity and in the front of his right upper chest. Radial, brachial, and axillary pulse could not be felt. Next day, œdema of the whole of the extremity appeared in addition to severe pain and the absence of pulsations. The œdema subsided in two weeks. Radial pulse was absent even after the œdema had subsided. Ultimately the patient developed clawing of the thumb, ring and little fingers and dry gangrene of the index and middle finger tips which were amputated later. It would appear that the injection though started intravenously, had inadvertently became intra-arterial, probably because of the abnormal presence of the ulnar artery subcutaneously and immediately deep to the antecubital vein, Lee and Atkinson[3] (1968) have reported that such an aberrant ulnar artery is present in 10% of cases.

Out of 56 patients 17 developed thrombosis of the injected vein. Two had vomiting during manipulation. One patient developed macroscopic hæmaturia, 15 patients had microscopic hæmoglobinuria but frank hæmaturia was not detected in any one of our cases. The one patient who developed macroscopic hæmaturia had received 5% intravenous mephensin. It persisted in the first three specimens passed 1, 4 and 7½ hours respecting after the injection. Subsequent specimens were clear.

Discussion.—Mephensin is not a good relaxant of the larynx; causes thrombosis of the vein, destruction of red blood cells, hæmoglobinuria and oliguria (Lee and Atkinson 1968). It has been shown that red cell destruction depends more on the strength of the solution than on the total quantity injected. In a strength of 2% or less, red cell destruction does not occur[2]. In the series of 24 patients to whom intravenous injection of mephensin was given in the strength of 2·5 to 5%, fifteen patients (54·2%) showed clinical evidence of venous thrombosis. The incidence of venous thrombosis became very much reduced (12·5%) when the dilution of mephensin was 2 per cent or less. Twelve patients (50%) to whom 2·5 to 5% of mephensin was injected showed microscopic hæmoglobinuria in the first and second urine specimens passed within 8 hours after the injection. This complication was much less when mephensin was injected in the strength of 2% or less. This hæmolysis of blood can be seen *in vitro* by mixing mephensin solution and blood.

To the patients, microscopic hæmoglobinuria was of no significance. However, to dilute mephensin to 2% or less, 50 to 60 ml., of solution requires to be injected. It was a large volume to be injected with an ordinary 10 or 20 cc. syringe. We also tried to give the mephensin solution by the intravenous drip but found it too cumbersome in out-patient treatment. One of our patients had the drug injected intra-arterially accidentally. Accidental intra-arterial injection of Thiopentone-sodium has been reported by Cohen[1]. This may be avoided by seeing that the artery is not occluded by the tourniquet before injecting. The main injection is given after finding out that the patient is not experiencing any pain at all. This mishap is dangerous as it can lead to necrosis and gangrene of the fingers. In our case, the amputation had to be made of the tips of the index and middle fingers only. The hand required a good amount of physiotherapy to regain optimum functional capacity.

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PUFFY FEET AND ANKLES DURING HOT WEATHER: PHYSIOLOGICAL BASIS

Q. Many women complain about puffiness of the feet and ankles during hot weather. What is the physiological basis for this complaint?

A. There are really multitudinous reasons why women might complain about puffiness of the feet and ankles, especially during hot weather. If one can assume that all systemic factors (cardiac, hepatic, and renal) and all local factors (such as lipedema, lymphedema, chronic venous insufficiency, local inflammatory processes) have been excluded as the possible primary causative factor, then one is still left with additional possible causes. These include the use of drugs that may cause edema, such as estrogens, and estrogen progresterone combinations, certain antihypertensive drugs, and many others. If these factors have been ruled out satisfactorily then one must consider dietary factors, primarily sodium intake.

It is my general impression, without any statistical data to back it up that many people ingest considerably more salt during the summer months than they do during the winter. This possibly is directly related to the fact that sodium loss may be increased during the summer, especially through perspiration, and therefore the individual may either wittingly or otherwise increase her sodium intake. Increased sodium intake may then cause mild gravitational or 'physiologic' edema. Again, if this situation is coupled with any of the systemic or local causes for edema, the process of edema development would be enhanced and worsened. I know or no other physiological basis —(J. F. Fairbairn II, M.D., Mayo Clinic, Rochester, Minn, *J.A.M.A.*, 25-11-1974).

ERGOTAMINE HAS SELECTIVE EFFECT ON CAROTID VESSELS

A pharmacologist working in the Netherlands has demonstrated that —as has long been suspected the effectiveness of ergotamine tartrate in migraine attacks appears to be our primarily to the drugs vasoconstricting action on the carotid vessels. Indeed the drug has a selective effect on the carotid vessels, compared to other blood vessels, a finding that was termed a "surprise".

Ergotamine is well known for its vasoconstricting effect, but it has other pharmacologic properties—such as antiserotonin and alphaadrenolytic actions and activities to modify circulatory reflexes. All of these have been considered possibly important in the mechanism of migraine relief because the effect of serotonin, abnormal vasomotor properties, and neurogenic control of vasomotor reflexes have all been invoked in the pathophysiology of migraine.—(*J.A.M.A.*, 5-11-1973).

INHIBITION OF IRON ABSORPTION IN MAN BY TETRACYCLINE

The effect of a therapeutic 500 mg. tetracycline dose on the 59 Fe-absorption from a therapeutic 50 mg. 59Fe^{3}+ dose was studied in subjects with normal depleted iron stores by intra-individual comparison. If administered together in aqueous solution, tetracycline produced an inhibition of 59Fe^{3}+ absorption of 78±19% (Xa+SD) in subjects with normal iron stores and an inhibition of 65±14% in subjects with depleted iron stores (pre-latent iron deficiency). The simultaneous administration also resulted in a significant, although less pronounced, inhibition of the iron absorption (32±20% and 40±8·4% respectively.—(H.C. Heinrich *et al*, via, *J.A.M.A.*, 17-6-1974).

IDIOPATHIC RETROPERITONEAL FIBROSIS*

(A REVIEW)

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IDIOPATHIC retroperitoneal fibrosis (IRF) a rare disorder, is a slowly progressing fibrotic process that starts mostly around the great vessels in the region of the sacral promontory and spreads upwards and outwards bilaterally or unilaterally encasing the retroperitoneal structures particularly, the ureters. Albarran, a French urologist, first described the condition in 1905 and later Perard and Orsini in 1937 (Anderson, 1967). Ormond was the first to contribute to the English literature in 1948 and hence the disease is referred to by some as Ormond's disease. It is only during the last decade or so that the medical world has given due attention to the disease and cases continue to be reported from all over the world the number of which by now will be over 200. The present communication is a short review of this interesting disease.

The etiology of the disease is still obscure. Methesergide produces a similar condition but is cured after withdrawal of the drug. Raper (1955, 1966) and Mitchinson (1970) have suggested a reason:—Origin-damage to the wall of the aorta or its large branches may be the cause. A similarity to collagen disease is suggested by disturbance in plasma protein, corticosteroid sensitivity and occasional accompaniment of arteritis or arthritis of rheumatic type (Mitchinson, *loc cit.*). The disease may be related to Takayashu arteritis, sclerosing cholangitis, idiopathic mediastinal fibrosis, Riedel's struma and pseudotumour of the orbit. Hutch *et al* (1959) consider IRF as a chronic inflammation of the perirenal (Gerota's) fascia. The present concensus of opinion is that IRF is an immunologic hypersensitivity disorder (Ackerman and Rosai, 1974).

Pathology :—The pathology of the disease has been studied extensively by Mitchinson (*loc cit.*) in 40 cases of IRF. It was mainly periaortic fibrosis which drew the ureters medially and did not extend laterally to involve the ureters. Fibrosis rarely extended below the pelvic brim or above the renal artery. Others have reported involvement of the perirenal area, common bile duct, pancreas and duodenum, base of the mesentery, extraperitoneal tissues of the anterior abdominal wall, mediastinum, lower third of the ureter and urinary bladder (Jose, 1967). Hutch *et al* (1959) quote 4 cases including one of their own where perirenal tissue has been involved. But extensive involvement of the retroperitoneal area has been seen in only one of these cases *viz.* case 7 of Raper (1956). At autopsy fibrous plaque was seen encircling the

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*Specially contributed to the 'ANTISEPTIC'.

aorta where it passed between the crura of the diaphragm. It spread downwards and to the left replacing the entire perirenal space and extended below almost to the top of the seminal vesicle. It barely touches the inferior vena cava until at the bifurcation of the aorta where it spread to the right along the iliac vessels for a short distance. There was no plaque in the right half of the abdomen. The right kidney was removed 11½ years previously; the kidney was found enclosed by fibrous tissue. According to Hutch *et al* (*loc cit.*) periureteritis plastica where the lower third of the ureter is only involved as reported by Vest and Blarelare (1953) is a separate entity. The ureters at the site of involvement were easy to free from fibrous tissue and these appeared like garden hose pipes. These features are in striking contrast to what is found in IRF.

Histologically, 2 types of fibrous tissue are found—(*i*) relatively cellular, avascular, hyalinised and often calcified and (*ii*) vascular collagenous bundles with inflammatory cells like lymphocytes, plasma cells and eosinophils. Abdominal aorta usually shows severe atherosclerosis but in 3 of Mitchinson's cases there was thoracic aortitis. The large veins and periaortic lymphatics are invaded by fibrosis and occluded. The small arteries are usually normal but medium size arteries show fibromuscular thickening of the intima. The lymph glands and the nerves though encased are not invaded by fibrous tissue The ureter at the level of fibrosis shows œdema and infiltration mainly of lymphocytic type but is not usually invaded by fibrous tissue. In case 1 of Hutch *et al* (*loc cit.*) the ureter in addition to severe inflammatory reaction showed marked replacement of the muscle by hyalinised connective tissue and no line of demarcation could be visualized between the ureter and the surrounding compressing fibrous tissue. No significant abnormality has been found in the bowels, female genital tract, prostate, urinary bladder, liver, pancreas, lungs and brain (Mitchinson, *loc cit.*).

The mechanism of urinary obstruction is not clear since usually the ureters do not show any significant lesion in the wall to produce organic obstruction. Retrograde catheter can be passed easily in the majority of cases. Interference with ureteric peristalsis by fibrous plaque outside acting as splint is considered to be the possible mechanism (Raper, 1956, Schneider, 1964).

Clinical features :—Idiopathic retroperitoneal fibrosis affects people of all ages but predominantly in the 4th and 5th decades of life Males are affected 3 times more frequently than females. The symptoms are bizarre such as vague abdominal pain or backache radiating to the groin, testes or inner aspect of the thigh, anorexia, nausea, vomiting, low grade fever and weight loss. Symptoms related to the urinary tract appear only when ureters are obstructed, rather late in the course of the disease. Physical signs are few. Flank tenderness in one or both sides is the commonest sign Hypertension may be present in about 25% of the patients. Oedema of the lower extremities or external genitalia occasionally occurs due to obstruction of the inferior vena cava or iliac veins. The patient may first be seen in an anuric state with azotaemia.

Diagnosis :—Diagnosis of the IRF in the early stage is extremely difficult as there is no specific clinical feature. Constant awareness is essential. It should be noted that many non-neoplastic and neoplastic conditions may cause retroperitoneal fibrosis *e.g.*, aortic aneurysm, diverticulitis of the colon, sarcoidosis, appendicitis, sarcoma, lymphoma (Kendall and Lake, 1961) and carcinoma (Jonsson *et al*, 1967). Hence these diseases should be excluded before diagnosing a case as IRF.

Persistent low backache or flank pain radiating downwards is a highly suspicious symptom. The suspicion is confirmed by IVP and retrograde ureterogram. IVP may show hydronephrosis unilateral or bilateral or a non-functioning kidney. The characteristic findings are narrowing and medial deviation of the mid-ureter and dilatation of the upper ureter and pelvis. The medial deviation of the ureter is a very helpful sign in differential diagnosis, since most retroperitoneal tumours displace the ureter laterally (Ackerman and Rosai, *loc cit.*) Ureteric catheterisation is easy in contrast to ureteric obstruction by other diseases, an important point in diagnosis. In some cases catheterisation may be impossible (Ormond, 1960). Involvement of the aorta and inferior vena cave may be seen in aortogram and venogram respectively but these procedures are not required for diagnosis.

Laboratory investigations are of little help. There may be moderate anaemia, sometimes high ESR and occasional red blood cells in the urinary deposit. Pyuria and nitrogen retention are common in the later stages of the disease.

Treatment :—Treatment is surgical. Administration of steroids, phenylbutazone and radio-therapy have produced sometimes satisfactory results (Lund and Pederson, 1959, Harrow and Slowane, 1962, Gibert *et al*, 1968) and these measures may be instituted after operation also. Ureterolysis through retro—or transperitoneal route is the treatment of choice. The latter offers the advantageous of examination and treatment of both sides but is disadvantageous if ureteroplasty or nephrostomy is required. Ureterolysis should be followed by some measures to prevent reinvolvement of the ureter in the fibrotic process. Various procedures that have been followed are to leave the ureter free in the peritoneal cavity, close the dissected channel or fill it with fat and at the same time transplant the ureter away from its former path. Intraperitoneal transposition has been recommended by some (Raper, 1960, Charnock, Riddell and Lombardo, 1961, Cibert *et al*, *loc cit.*) but others (Jose, *loc cit.*) have found it unsatisfactory.

Prognosis :—The prognosis is good if surgery is undertaken early. However, in an individual case the prognosis is unpredictable because of the variable and capricious course of the disease. Frequent follow up is essential to assess the need for further treatment. Anuria or "chronic nephritis" carries a very bad prognosis (Cibert *et al*, *loc cit*).

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PNEUMATOSIS INTESTINALIS*

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PNEUMATOSIS intestinalis is an uncommon condition characterised by the presence of gas filled cysts of varying sizes in the walls and mesentry of the gastro-intestinal tract. The first report of this condition is credited to Bang[1]. Its pathogenesis far from being clearly understood and continues to be a debatable point. The clinical manifestations are not also characteristic.

***Aetiology*:—The presence of gas in the wall of the intestines is most commonly ascribed to intraluminal gas being forced into the intramural lymphatics opened up by ulceration. This hypothesis is supported by the observation that nearly 85 per cent of the cases are associated with inflammatory or obstructive lesions of the gastrointestinal-tract, the most common being pyloric stenosis following peptic ulcer[9]. Another possible pathway of intraluminal gas is from alveolar rupture in obstructive pulmonary conditions. This air causes pneumomediastinum, dissects to retroperitoneal spaces, thence through the vascular channels of the mesentry travels to the subserosal and submucosal layers of the intestines. This is supported by the frequent association of pneumatosis intestinalis with obstructive pulmonary diseases.[5,3]**

Infection of lymphatic channels by gas-producing organisms and lymphatic obstruction and stasis have also been incriminated in the formation of gas cysts. The possibility is however, negated by the absence of peritonitis in patients developing pneumoperitoneum as a result of rupture of the cysts[10].

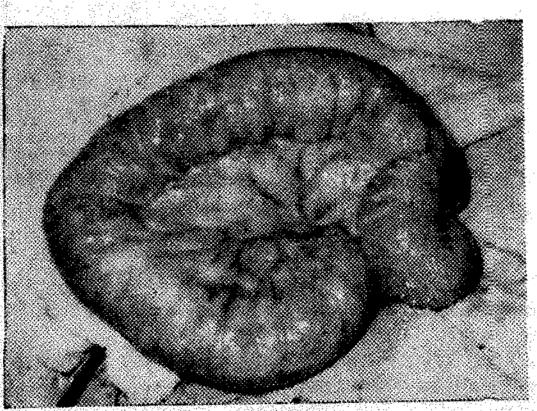

FIG. I. Shows segment of ileum with gas cysts.

A similar condition occurs naturally in pigs and has been produced experimentally in the pigs on deficiency diet[7] Druckman *et al*[6] believe that in human beings pneumatosis follows malnutrition and disappears with improvement in nutrition.

***Pathology*:—The size of the gas cysts varies from a few millimeters to several centimeters. The cysts are present in**

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*Specially contributed to the 'ANTISEPTIC'.

the subserosa of the intestine but submucous distribution is also occasionally seen. The cysts may be sessile or pedunculated. Occasionally clusters of considerable size are formed and these may cause obstruction by pressure on the lumen or by causing volvulus. The cysts seldom communicate with each other. The most frequently affected part is the ileum. The jejunum and the colon may also be involved.

The gas spaces are usually devoid of endothelial lining[2, 10] however speed, describes a cyst lining of endothelial cells with eosinophilic cytoplasm and small, dark nuclei. Occasionally large giant cells are also seen. Dense fibrous tissue surrounds the lining. There are no signs of inflammatory changes in the vicinity of the gas cysts. The cysts may disappear spontaneously.

The time of onset of the gas cysts cannot be stated with certainty. Dale and Pearson[4] observed the formation of cysts in their case during a short duration of five weeks. In one of our cases (Case No. I, *overleaf*) the pneumatosis developed over a period of 9 months.

The disease is invariably associated with other disease of G. I. tract like—gastric ulcer, Pyloric obstruction (in 58% of cases[9], obturative obstruction of small gut and various enteritides. Association with obstructive pulmonary conditions has been emphasized by Doub and Shea, 1960 and Culver, 1963. Druckman *et al* (1961) believe that in adults pneumatosis follows malnutrition.

Clinical features :—There is no characteristic clinical presentation of pneumatosis[8]. The gas cysts, *per se,* are asymptomatic. Nausea, vomiting and occasional diarrhœa may sometimes be present. Clinical manifestations are primarily those of associated conditions involving the gut (Peptic ulcer, pyloric obstruction, etc.) or due to complications of pneumatosis. Intestinal obstruction, due to pressure of cysts, volvulus or intussusception is the commonest presenting symptom. The cysts may rupture causing pneumoperitoneum but absence of peritonitis is pathognomonic. Rarely, acute dilatation of the stomach may be the presenting feature as reported by Burnett and Wynn Williams[2] and as seen in our Case No. II, *overleaf*.

Diagnosis is usually made during exploration or at autopsy. The gas cysts can occasionally be seen in plain or contrast studies of the abdomen as clusters of radiolucent areas which follow the contour of the bowel.

Pneumatosis *per se* does not require operative treatment and even some complications like pneumoperitoneum can be managed conservatively as there is no infection. Obstruction and hæmorrhage necessitate resection of the involved segment.

Case Reports.—CASE I :—K.D., a 25 year old female was first seen on 21-6-1969 with complaints of acute colicky pain in the right iliac fossa and vomiting of 48 hours' duration, a palpable tender lump and marked polymorphonuclear leucocytosis (Total count 16,400 per cmm.). She was treated conservatively and discharged 6 days later with advice to get appendectomy done after 6 weeks. She did not turn up for about one year and remained symptom-free during this period, except for mild dull pain in the right iliac fossa off and on. She was readmitted on 21-6-'70 with moderately severe pain in the right iliac fossa, tenderness on palpation and leucocytosis. This time after giving her conservative treatment, operation was undertaken using McBurnys incision which was later on extended transversely. The appendix was thickened, fibrosed and adherent. Appendectomy was performed. Further exploration revealed a 10 inch segment of terminal ileum which was markedly congested and thickened with overgrowth of fat in the mesentery. A few scattered fleshy lymphnodes were seen without caseation. There was no pneumatosis intestinalis in the jejunum or ileum. The stomach was moderately dilated and pylorus was thickened and fibrosed. A mesenteric gland was removed for histological examination and ileotransverse anastomosis was performed. The lymphnode showed hyperplasia and no evidence of tuberculosis. Patient was readmitted on 10-2-1971 with recurrent vomitings and colicky pain in the abdomen. She was severely anæmic (Hb— 6 g.%). The sedimentation rate was 25 mm. Barium meal study showed evidence of pyloric stenosis. After preparing the patient with blood transfusions, etc., laparotomy was performed on 2-3-1971 which revealed a 16 to 18 inches long segment of the ileum, just proximal to the previous ileo-transverse anastomosis, with multiple foamy cysts of variable sizes (*see* Photograph I). The pyloric region showed a marked thickening and fibrosis with a dilated stomach. The loop of the ileum showing marked thickening and congestion on the previous laparotomy was now absolutely normal. Retrocolic, isoperistaltic gastrojejunostomy was performed.

Post-operative progress of the patient was quite satisfactory with rapid gain in weight and improvement in the anaemia. Subsequently the patient became pregnant and delivered normally. When last examined, about 2 years after the operation, she was in normal health.

CASE II.—R.B., a 45 year old female was seen on 22-8-'73 with acute intestinal obstruction. She was admitted to the medical ward on 18-8-'73 as a case of subacute obstruction. She had a 12 years' long history of pain in the epigastrium and vomiting off and on. Pain was unrelated to meals. She was having gradually increasing distension of abdomen for the last 1 year. She had increasing weakness and œdema of the feet for the last 6 months. About one week before admission she had developed increasing constipation and vomitings. Clinical examination revealed a poorly nourished and anaemic female with moderate dehydration. Abdomen was markedly distended, more so in the central part. Umbilicus was everted and there were a few prominent veins over the abdominal wall. Abdomen was resonant in the central part and dull in the flanks. Shifting dullness was present. Chest was normal. Laboratory investigations showed—Hb. 8·0 Gm. %. TLC—8600/cu. mm. with 60% neutrophils and 40% lymphocytes. Urine was normal. Screening of the chest did not reveal any abnormality. Plain skiagram of abdomen showed a shadow of a markedly dilated viscus in the upper abdomen with a large fluid level suggestive of volvulus of the cæcum. With a pre-operative diagnosis of volvulus of the cæcum emergency exploratory laparotomy was done on 22-8-73 through a right paramedian incision. There was a large amount of clear ascitic fluid which was sucked out. The stomach was tremendously dilated and was filling up almost the whole of the abdomen. Suction through the indwelling nasogastric tube proved ineffective and so gastrostomy was performed by Stamm Kader technique ; further exploration revealed a slightly thickened pylorus but no evidence of duodenal or gastric ulcer. Liver showed early cirrhotic changes. Rest of the gastro-intestinal tract was normal. Abdomen was closed in layers.

In the immediate post-operative period the patient was maintained on continuous drainage through the gastrostomy tube and *i.v.* fluids. Oral feeding was commenced on the sixth post-operative day and the gastrostomy tube was removed after another 3 days. Patient started taking normal low residue diet and was having normal bowel movement. Her nutritional status had also improved. On the 10th post-operative day she again developed acute dilatation of the stomach. She was treated with continuous nasogastric suction and parenteral fluids and electrolytes. She improved in 3 days' time and was started on normal diet. The patient again developed acute dilation of stomach after 21 days but this time left the hospital against medical advice and was lost for fellow-up.

Summary.—Various aspects of Pneumatosis intestinalis have been succinctly reviewed and two cases of this condition have been reported with details.

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CARCINOMA OF THE THORACO-ABDOMINAL OESOPHAGUS

Carcinoma of the oesophagus, a disease process which is unusually prevalent in certain parts of the Republic of South Africa, has been treated by many different methods, but all have had poor results, often because the disease is well advanced when the patient first seeks medical attention. Even early cases, however, tend to pursue a progressive course, terminating in the death of the patient.

The results of this treatment regimen are extremely encouraging, especially in those patients who, having been found to have residual disease at surgery, were also subjected to post-operative irradiation. Patients in group II, who were not included in the surgical part of the trial, have also responded extremely well to treatment. It is thought that this form of therapy, with its excellent results, might obviate the need for surgical removal of the lesion. Certainly those patients who did not undergo surgery had very little morbidity during their period of chemotherapy and subsequent divided course of cobalt irradiation.

The method of treating carcinoma of the oesophagus as described in this article is still in a trial phase, but the outcome to date substantiates the theory that excellent results can be obtained by treating this very aggressive condition by a combination of modalities.—(Warner, I.D. *et al S.A. Medical Journal*, 12-4-1975).

ROLE OF CRYO-SURGERY IN TREATING E.N.T. DISEASES*

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INTRODUCTION :—Cryo-surgery is rapidly developing into a successful tool in the treatment of human diseases. It used to be said that there is very little new under the sun. The use of cold as a therapeutic modality is thus no exception.

Cryo-surgery has been defined by Cahan as that branch of medical science that relies for its value on local tissue changes produced by a low temperature.

Cryo-surgery offers the advantage of producing a virtually total cell destruction which can be precisely limited to the diseased tissue. An additional advantage is the concomitant destruction of the sensory nerve endings which make the use of cryo-surgery relatively painless and the subsequent area of necrosis pain-free. There is very little blood-loss with its use and the side-effects are minimal.

Applications of cryogenic surgery :—Cooper in 1661 started his Cryotherapy for Parkinsons disease. Hill published in 1965 the technique of cryotonsillectomy. Hankel in 1965, successfully used cryotherapy in the management of angiofibroma and glomus juglare tumours. Gage 1965 described—cryo-surgical treatment of cancer of the skin, oral cavity, prostate, urinary bladder and bone tumours.

The principle underlying the surgery :—Application of intense cooling results in the localised destruction of tissue.

Cooling agents and equipment :—The cooling agent used is liquid Nitrogen which lowers the temperature to 200°C. Another coolant is liquid Freon. There is a special equipment having a probe known as cryoprobe. The temperature is measured with the help of a thermocouple on the probe.

Physio-pathology :—The various phenomena which are responsible for tissue destruction by cryo-surgery are :—

(1) It causes cellular crystalisation.

(2) Deep freezing causes tissue dehydration.

(3) Toxic concentration of electrolytes takes place which are harmful to cellular metabolism.

(4) Thermal shock occurs due to freezing which is injurious to the tissues.

(5) There is formation of solid ice balls which block the blood vessels, thereby vascular stasis follows and the blood supply to the part is abolished.

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*Specially contributed to the 'ANTISEPTIC'.

Applications of cryogenic surgery in E.N.T. :—Extreme cold as a surgical modality is a new discovery in Otolaryngology. The various conditions of E.N.T. in which Cryo-surgery is now being used are :—

(1) Tonsilectomy (tonsilitis), (2) Nasal polyp, (3) Juvenile laryngeal papillomata, (4) Hæmangioma, (5) Leukoplakia, (6) Intractable epistaxis, (7) Hypophysectomy, (8) Glomus juglare tumour, (9) Nasopharyngeal fibroma, (10) Meniere's disease and (11) Head and neck tumours.

Cryotonsilectomy is very useful in enlarged tonsils, particularly in patients with blood dyscrasias. In 2 to 3 weeks, the necrotic tissue disappears. Although cryo-surgery does not destroy all the lymphoid tissue, the remaining tissue appears to be more resistant to infection.

In Meniere's disease the main advantage is that hearing is preserved while the labyrinth is selectively destroyed with relief of vertigo.

Severe epistaxis is a common but serious problem. The most commonly used method for arresting severe epistaxis is anterior and posterior nasal packing. Though it is the most popular method, it is extremely uncomfortable to the patient and it may be associated with serious complications. Cryotherapy has proved to be less uncomfortable for the patients in such cases.

There are many advantages of using cryo-sergery in head and neck tumours :

(1) There is little or no morbidity. (2) Resection of adjacent bone is not required. (3) Most lesions can be treated under local anaesthesia. (4) This treatment can be used repeatedly even if the patient has received radiotherapy.

The value of Cryotherapy for oral cancer affords a reasonable chance of cure in selected cases. Cryotherapy is a good alternative to excision in patients with associated diseases which preclude lengthy operations.

For palliation of incurable cancer pain in carefully chosen patients, cryotherapy compares favourably with other methods of producing necrosis. Its effect is more localised then that of radiotherapy or drug therapy.

Summary.—Cryosurgery is the most recent weapon in use for tissue-destruction which is easier to use in certain situations where surgical approach may be complicated or contraindicated. It has certain advantages over other modalities. It is safe, painless and can be used without anæsthesia on an out-patient basis. Hospitalisation is not required and the risks of general anæsthesia are eliminated. There is little post-operative discomfort.

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Cases and Coments :

TORSION OF THE GRAVID HORN AND OBSTRUCTION BY NON-GRAVID HORN

IN UTERUS BICORNIS UNICOLLIS TERM PREGNANCY

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INTRODUCTION :—It has been suggested that double uterus is not a defect but an atavism. The basic fault however is in failure of fusion of the paired mullerian ducts in the caudal region. Whether it be Strassman's orthodox classification or Dougherty's simple one, this is definitely a variety of two horned external configuration (bicornuate) with a single cervix (unicollis). The incidence, previously recorded as one in 7,000 is now one in 100 due to Hysterosalphingography und Gynæcography[3] . Strassman[11] has reported 1·1 to 3·5% with this anomaly. and Baker[1] 0·3% in deliveries. Menstrual history and reproductive capacity are not at variance, but the obstetric performance is altered—1/3 end as abortions, 1/3 as premature delivery and 1/3 go to produce a living child. Although the majority have normal deliveries, accidents like incarceration of the 2nd horn [9] leading to non-engagement of the presenting part and eventually rupture of the uterus, torsion of the gravid horn[5,8] causing shock have been noted. Recently torsion of the gravid horn and obstruction by the non-gravid horn was encountered in a case of Uterus bicornis unicollis. Hence, the case is presented not only for its rarity but also for the duplicate nature of uterine anomaly and dystocia.

Case report.—Mrs. S., aged 25 years was admitted on 22-4-'75 for 9 months' amenorrhœa and false labour pains. She attained menarche when she was 11 years of age and had normal menstrual cycles. In her 12 years' married life she had 5 deliveries, the first and the last were premature still-births, and the rest were normal full term vaginal deliveries resulting in live birth; she lost one child born at the age of 9 months, owing to typhoid fever. Although all previous labours were home confinements, she had come for the present sixth to the hospital for post-partum tubal ligation as she already had 2 living children.

On examination her condition was good and all systems were normal with no anæmia or toxæmia.

Obstetric examination showed that the fœtus was much bigger than the average with an unengaged head. There was no evidence of hydramnios. She went into labour on 29-4-1975. As the progress, was tardy, A.R.M. was done. After 2 hours of waiting there was fœtal bradycardia. So an emergency cæsarean section was done.

On opening the abdomen, the left tube and ovary were seen below the line of the peritoneal incision. This was corrected and it was noticed that the uterus had undergone a torsion of 90° from left to right. The lower segment was thin with many tortuous veins, and on incising it the fœtus (a female 2·9 kg) was delivered. After performing tubal ligation on the left side the tubes were not isolated on the right side. Therefore uterus unicornis was diagnosed. The hand was inserted to explore the kidneys which were found to be normal. A soft mass 16 to 18 weeks' size was lifted from the Pouch of Douglas, which was not only in continuity with the lower uterine incision but also well developed uterine appendages were arising from the right side of this mass. The Recto-vesical fold of the peritoneum was seen dividing the 2 at the pelvic space. Hence, there is no direct evidence of Uterus Bicornis Unicollis, *i.e.*, two uterine cavities with one endocervical canal together making an Y shaped space. After ligating the right tube and closing the abdomen a vaginal examination was made. No septum was palpated. There was a single cervix with 2 uterine cavities one gravid and the other non-gravid.

Her post-operative period was uneventful. Before discharging on 21-3-1975 a repeat vaginal examination confirmed the same finding.

Comment.—It is pertinent to discuss this uterine anamoly in relation to two peculiar problems *viz.*, (*i*) gravid horn; (*ii*) non-gravid horn.

I. **Gravid horn.**—Torsion of the gravid horn is often common as veterinary occurrence but sometimes it is seen also in humans during labour, misdiagnosed as accidental hæmorrhage or acute abdominal catastrophe. The surprise-diagnosis is only made at laparatomy or *post mortum*. This type of torsion is primary and so Shah[10] reported a dozen cases including one of his own. Later additional cases by Gupta[5] and Bandi[2] have increased the number to 14. Including the present case it may be 15 upto-date in Indian literature. The direction and degree of torsion were noted only in 13 cases. In 7 the rotation was from right to left, and in 6 it was observed to be left to right (including the present). The degree of rotation was 18° and more in 10 cases. Only in 5 it was 90° wherein recovery was good requiring only a casarean section, and not hysterectomy as observed in the former 10 patients. Of these 15 only 3 show term-pregnancies, Rosychi, Gupta including the present case. All the rest, *i.e.*, 12 were between 20 to 28 weeks. The fœtal salvage could not be revieved but as seen it is rare for a fœtus to go to term with this uterine anomaly. This depicts not only the rarity but also the fatality of this condition.

The causative factors for torsion are a narrow softened cervical canal serving as pedicle for the wide, asymmetrically enlarged bicornuate body favouring undue motility and deviation. Robinson[7] enumerated activating factors like position and body movements, occurring during daily domestic duties and also during labour. He has laid down 6 criteria for diagnosis, the most important being spiralling of the vagina and the absence of bleeding. It is pertinent to mention that whenever a bizarre and misleading clinical entity presents, it is better not to attempt a vaginal delivery but resort to cæsarean section.

II. Non-gravid horn.—The prognosis in any uterine anamoly depends upon the sulcus between the two horns. If pronounced a longitudinal lie results and if slight an oblique lie. If this horn gets distended with blood to form a hæmatometria it causes obstruction. Even an undistended horn displaced in the pouch of Douglas is mistaken in the early months of pregnancy for an ectopic and in later months for ovarian tumour. The non-gravid horn behaves as an appendix and as pregnancy advances it is dragged behind the pregnant horn to cause obstructed labour[9] . Uterine rupture may occur due to mechanical obstruction by the impacted horn enlarged to 2 to 3 times its normal uterine size. In our case the non-pregnant horn on the right side had enlarged to 16 to 18 weeks' size and was impacted in the pouch of Douglas. This was interfering with the descent of fœtal head although there was no pelvic contraction.

Conclusion.—A term pregnancy resulting in a live fœtus in a case of uterus *Bicornis unicollis* is reported. A few salient features regarding the dystocia in respect of the gravid and non-gravid horns is presented. It is interesting to note the following factors in this case.

I. The patient had a good previous obstetric record which did not arouse suspicion of her present uterine anamoly.

II. The mass in the Pouch of Douglas even though enlarged to 16 to 18 weeks' size was missed by vaginal examination.

III. In spite of the torsion and the obstruction the fœtus was not only mature but also alive.

Acknowledgement.—My grateful thanks are dueto Dr. J. Leelavathy Reddy, M.S.; D.G.O.; Professor and Head of the Department of Obstetrics and Gynæcology Medical College; Bellary for according permission to report this case.

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CHOLERA

Present outbreaks of cholera are due to the El-Tor vibrio, which produces a higher ratio of asymptomatic cases and sometimes carriers, with spread within families, especially where sanitation is inadequate. The Indian subcontinent and South East Asia are endemic areas, but outbreaks have occurred in Southern Europe and North Africa, vaccination results in about 60% protection but lasts only a few months. Mild diarrhœa may be due to cholera, but the usual attack is severe and indistinguishable from Asiatic cholera. After an incubation period of one to three days there is an explosive onset of profuse watery diarrhœa, accompanied by vomiting, cramps, and rapid dehydration and collapse, making admission to hospital urgent. The clinical picture is due to the effect of endotoxin on the small intestine, which result in profound losses of water and electrolytes. Vibros are easily identifiable in the rice water stools. Salmonella and other types of food poisoning may produce a cholera like syndrome.—(*Brit. Med. Jour.*, 30-11-1974).

ACUTE EPIGLOTTITIS : A SURGICAL EMERGENCY

Of 97 patients with acute epiglottitis, 83 were reviewed restrospectively and 14 were studied prospectively to clarify some of the common misconceptions regarding the onset, clinical course and management of this disorder. It is a relatively more, life threatening infection of infants and pre-school-age children, but it also occurs in adults. It is frequently referred to us "Hæmophilus influenzæ croup epiglottitis", which is misleading, as croup is usually not present, and though H influenzæ is the most common causative organism, other pathogens have been implicated. The course of acute epiglottitis is radically different from that of the more common viral croup syndrome in that the patients often have rapidly progressive and frequently abrupt airway obstruction. An assured airway is mandatory in treatment. Nasotracheal intubation should not be attempted without provisions for immediate surgical intervention. Acute epiglottitis should always be considered a surgical emergency.—(Col. James, W. Bass, Russell, W. Steele and Maj. Robert, A.Wiebe, *J.A.M.A.* 5-8-1974).

PRIMARY AMYLOIDOSIS

(A Case Report)

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Amyloidosis is a disease of unknown ætiology characterised by the accumulation of an amorphous proteinaceous material in various organs and tissues of the body. Rokitansky in 1842 first described the disease in association with chronic sepsis. Virchow attached the name Amyloid due to its staining characters with iodine. The first description of Primary Amyloidosis was made by Wild in 1886, while reporting a case of Amyloidosis not associated with a preceding chronic disease.

Several classifications of Amyloidosis have been put forward. The earliest and simplest is that of Reiman, Koucky and Klund who postulated (1) Primary Amyloidosis with no antecedent or coexisting disease with involvement of mesodermal tissues, (2) secondary amyloidosis with involvement of liver, spleen, kidney and adrenal glands. (3) tumour-forming amyloidosis and (4) amyloidosis associated with multiple myeloma. Other classifications include those of King and Symmers.

In secondary amyloidosis, considered so far to be a more common variety of amyloidosis, many organs are involved and the clinical manifestations depend on the major sites of amyloid deposition. Spleen, kidney, liver, adrenal glands are most involved but also G.I. tract, heart and blood vessels may be involved. They are associated with chronic infection, inflammatory and neoplastic diseases.

With the control of chronic infectious and inflammatory processess, the incidence of primary amyloidosis seems to increase, both apparent and real. A hereditary form of amyloidosis is postulated.

Primary amyloidosis is defined as systemic amyloidosis of unknown ætiology in which no associated pathological lesion is present. It is a disorder comprising of a heterogenous group and it is apparent that several sub-groups can be distinguished. In primary amyloidosis the deposits are widespread, involving the heart, lungs, striated muscles, and blood vessels. (Frederickson *et al* 1962). Signs of initial parenchymal involvement (kidney, liver and spleen) were equally prevalent among patients with primary and secondary amyloidosis (Kenneth Brandt *et al* 1968). According to the commoner manifestations neuropathic, cardiopathic and nephropathic varieties have been recognized.

(Gaffini *et al* 1964, Chambers *et al* 1958). Macroglossia (40%) hepato-splenomegaly (60%-65%), ascites and G I. disturbances are also common features of the primary variety. (Briggs *et al* 1961, Gregg *et al* 1965, Brandt *et al* 1968).

Amyloid is an amorphous, eosinophilic glassy, hyaline extra-cellular substance that is ubiquitous in its distribution. Small amounts do not produce any demonstrable abnormalities. With larger deposits the organs have a rubbery firm consistency, the liver, spleen, kidney and the heart are large and G.I. tract locally or generally thickened and ulcerated. Microscopically it stains pink with hæmotoxylin and eosin, metachromasia, preferential reaction to methyl violet and crystal violet is another characteristic feature of amyloid.

According to present concepts amyloid fibrils represent fibrous protein that is normally present in minute amounts in the body but under a wide variety of stimulli or under genetically determined circumstances are over produced or under-nourished. Primary enzymatic defects would be considered in such a frame-work. The primary defect may be in the ground substance in which the fibril is deposited. (Alan S. Cohen, 1967).

A case of primary amyloidosis is presented here for its clinical interest :—

Case report :—J. V. female, 60 years, a washerwoman by profession was admitted into the wards of the Senior author for complaints of lowgrade fever, burning of feet and hands, tingling and numbness of the hands and legs of one year's duration and œdema of the legs of 2 months' duration. There was nothing significant in the history of previous illness. The present illness started gradually and progressed insidiously for which the patient had treatment off and on without any significant relief. Lately she had developed giddiness which was prominent on standing erect. In the family history, her father died 5 years previously of anasarca, except which the patient was not able to give any other details of the illness.

Her appetite and digestion were impaired and the bowels constipated.

On examination, she was an elderly lady, looked ill, had a sallow complexion, more pronounced on the face, tongue slightly bigger than normal with indentation of the teeth present. Pulse rate 88/minute and of low volume. There was occasional irregularity in the pulse which was however, not a constant finding. B.P. in the right arm was 90/70 mm. Hg. in the lying position and 84/62 mm. Hg. in the erect posture ; œdema of the legs was present. The chest was normal. Liver was palpable, two fingers below the right costal margin, firm in consistency with sharp borders. Spleen was not palpable.

There was hyperæsthesia for pin prick and cotton wool in glove and stocking distribution. The ankle jerk was diminished and the plantars were flexor ; nothing abnormal about her spine.

The patient was diagnosed as (?) malignancy for further investigation. A comprehensive report of all the investigations made with their results will be found in Table below. All investigations for a probable source of the primary disease were negative and a diagnosis of primary amyloidosis was entertained, based on the liver biopsy.

Discussion.—It is apparent that apart from a suspicion of a chronic illness, the patient did not have any feature to suggest amyloidosis at the outset. The significant findings in the patient included the parasthesias, with the glove and stocking sensory disturbances, the occasional irregular pulse, the postural hypotension which may account for the giddiness, the hypoalbuminæmia, macroglossia, and hepatomegaly, and the low voltage ECG. The liver biopsy established the diagnosis of amyloidosis. Stanfer, M. H. *et al* (1961) stress the importance of liver biopsy in the diagnosis of amyloidosis. This patient had albumin-free urine at the beginning but had 3 plus albuminuria at the time of discharge indicating probably the development of clinical renal amyloidosis. The B. P. was persistently low; the serum electrolytes were within normal limits which ruled out the possibility of adrenal amyloidosis. Hypotension has been reported as a manifestation of primary systemic amyloidosis (Robert Akyle *et al* 1966, and Maximilian Bujætal 1970). The incidence of hypotension in amyloidosis is reported to be between 11·8% and 44%. Smilarly cardiac arrhythmias, and low voltage in ECG have also been reported. (Albert J. Josselsen and Raymond Pruitt 1953), Thomas N James 1966, and Maximilian Bujaetal 1970).

Although neurological symptoms were prominent presenting features in this case the nerve biopsy was negative for amyloid deposits.

Investigations.—(1) URINE :—3/8—*Alb* : Nil, *sugar* : Nil, *Microscopy* : nothing abnormal, 20/10—*Alb* : +++ *sugar* : Nil, *Microscopy* : Few hyeline casts +, 25/2 Bence Jones proteins absent.

(2) COMPLETE HAEMOGRAM:—*WBC* : 6200/cmm. P 39%, L 48%, M 1%, E 11%, B 1%, HB : 10 0 G%, *RBC* : 3 5 mill/cu. mm., RCV 34% MCV 96 CU MCH 28·5 mmg. MCHC 29·4%.

(3) 23/8 *Blood Urea*:—26 mg%.

(4) 6/8—*SGOT* 189 Units. (Normal 26-98 Units) *SGPT* 132 Units. (Normal 29-116 Units).

(5) 7/8—*Vandenbergh*—Negative. *Serum bilirubin* — 0·6 mg% TTT-5 Units.

(6) 7/8 *FTM.*—Hypochlorhydria otherwise-NAD.

(7) 16/8—*Fasting blood sugar* 83 mg%, *Postprandial blood sugar* 108 mg%.

(8) 25/8—*Serum total protein* 5·7 G%, *Albumin* 2·6 G%. *Globulin* 3·1 G%.

(9) 6/9—*Serum Alkaline Prosphatase* 6 KA units.

(10) 8/9—*Prothrombin time control* 21 seconds. Test 31 seconds.

(11) 6/9—*Bleeding time* 5 minutes 52 seconds. *Clotting time* 3 minutes 45 seconds.

(12) 7/10—*VDRL* Non-reactive.

(13) 1/10—*Serum sodium* 133 *mEq/L*. *Serum potassium* 4·5. *mEq/L*.

(14) *Fundus Exam.*—NAD.

(15) *X-ray Chest* PA VIEW.—Normal.

(16) *Barium Meal* SERIES FOR STOMACH AND DUODENUM.—Normal.

(17) *ECG*.—Shows uniform low voltage: Otherwise : NAD.

(18) *I.V.P.*—Excretion normal in both Kidneys.

(19) *Liver Biopsy* :—(1184/71 dt. 20-8-71. dt. 21-8-71).

Section showed no evidence of any malignancy. Liver tissue showed amyloid deposits between the liver cells and sinusoidal epithelium. The deposited material showed hemetachromasia. The liver cells are atrophic.

Opinion.—Amyloidosis of the liver.

(20) *Bone marrow* (Sternum) aspiration. (18/71). Hypoplastic marrow with diminution of all elements. No evidence of myeloma cells.

(21) *Nerve biopsy* and *Muscle biopsy* (1334/71) dt. 12-9-71. There is no evidence of amyloid deposition, either in the nerve or in the muscle sent for study.

(22) *Congo Red Test* :—(1) Congo red retained in serum. 60 Minutes after injection 15% (Normal 70-90%), (2) Congo-red lost in urine. 60 minutes after injection 3%, (Normal Nil or Trace). *Result* is highly suggestive of amyloidosis. (Retention of less than 40% is diagnostic).

Summary and conclusions.—A brief report on a case of primary amyloidosis is presented with a discussion on the pathogenesis, pathology and clinical manifestations of amyloidosis. The peculiar features of the case are stressed.

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TRANSVERSE TESTICULAR ECTOPIA

(A Case Report)

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TRANSVERSE testicular ectopia is a condition in which both testes are present in the same side of the scrotum. Of all the varieties of testicular ectopia, that in which both the testes descend to the same side of the scrotum is the rarest. W. S. Halsted in 1907 reported the first case and so far about 30 cases have been reported in world literature. It was noted that in most of the cases reported so far, both testes are present on the left side. This is often said to be familial. In a number of cases reported in literature, polyorchidism was not ruled out by laparotomy. Hence polyorchidism should always be confirmed by laparotomy; as otherwise it is impossible to rule out the presence of a third intra-abdominal testis, with all its associated complications.

Developmentally this anomaly can be explained by the following theories:—

(*1*) One testis crossing over to the otherside in the lower part of its descent. A testis may develop on each side, but one of them is carried over the Cave of Ritzius to the other side along with its blood supply. Rarely both may have a common blood supply; (*2*) The two Wolffian ducts adhere to each other during the course of development leading to descent of both testis on the same side or not at all; (*3*) The two testes may develop from the genital ridge on one side of the abdomen and descend to the same side of the scrotum; on the other side another normal testis develops but is retained in the abdomen; (*4*) Both testes may develop from the genital ridge on one side and none on the other side.

Intravenous pyelography should also be done as a routine to exclude structural abnormalities of the urinary system. Operative treatment consists of restoring the normal anatomy by reconstructive procedure which was adopted in the case reported below:

CASE REPORT:—A boy aged 3 years (I. P No. 3544/1975) was admitted on 8-3-1975 for an inguino-scrotal swelling on the right side, since birth. There was occasional history of pain in the region of the swelling and it was never reducible. On clinical examination, an inguino-scrotal swelling was seen which was 3 cms. × 2 cms. in size, pyriform in shape and expansile cough impulse was absent. The swelling was not reducible, soft in consistency and not transilluminating. Testis and spermatic cord were not distinctly palpable. The left half of the scrotum was empty and ill-developed. The left testis was not felt in abnormal position. No other congenital abnormalities were noted. *Clinical diagnosis*: Infantile hydrocele of the right side with cryptorchidism on the left side.

On 11-3-1975 under general endotracheal anæsthesia, the inguinal canal was opened on the right side. It was noted that both the testes were present on the right side, carrying independent blood supply. There was a triangular fold connecting the spermatic cords. On cutting the triangular fold and separating the spermatic cords, the hernial sac was found in between the cord structures. The sac was opened, the fluid let out, transfixed and excised at its neck. The testis with the shorter spermatic cord was pushed into the scrotum on the right side and anchored to the skin. The other testis with the longer spermatic cord was pushed through the septum into the left side of the scrotum and fixed to the skin. The wound was closed in layers. Patient had an uneventful post-operative recovery.

Post-operative intravenous pyelography:—There was no structural or functional abnormalities of the kidneys, ureters or bladder.

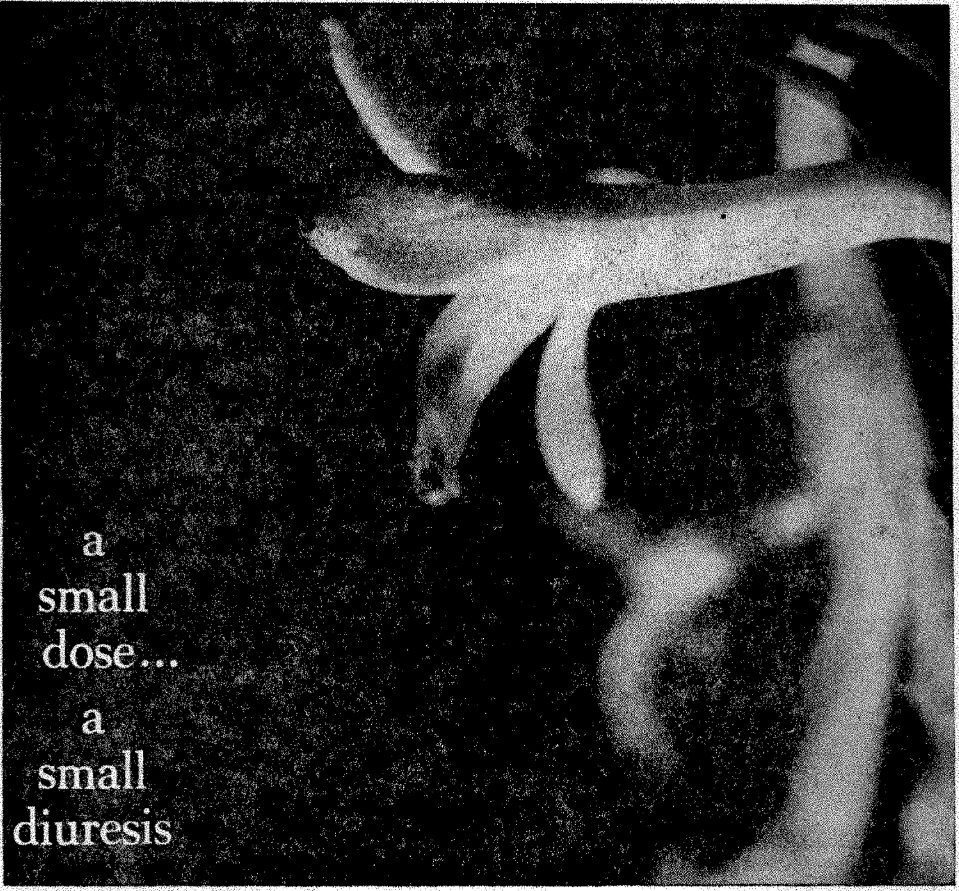
The parents of the boy were not willing for exploration (*i.e.*, laparotomy) for an undescended testis (Polyorchidism) on the left side.

Summary.—A case of right sided transverse testicular ectopia is presented because of its rarity. The general incidence, embryological views regarding its origin and associated anomalies of the urinary system are discussed. The importance of recognising polyorchidism is stressed. Surgical correction, to restore normal anatomy is outlined.

Acknowledgement—I am thankful to Sri Krishnaiah Choudury for his valuable help in taking clinical photographs at the time of operation. I am also thankful to the Superintendent, Govt. General Hospital, Kurnool for according permission to publish this case report.

KIDNEY TRANSPLANTATION : ANALYSIS OF 200 CASES

The first 200 renal allograft operations performed at Addenbrooke's Hospital, Cambridge, have been analysed. At the time of writing the fractional graft survivals at one, two, and three years were 53%, 49% and 39% respectively and these showed no observable change through the seven years of the programme. On the other hand, the survival of patients with renal transplantation steadily improved, the most recent survival rates at one, two, and three years being 83%, 78% and 67% whereas the overall rates were 74% 64% and 54% respectively. The survival of second allografts was similar tothat of first allografts. Ninety percent of the patients etc. whose allografts functioned for a year or more returned to active and gainful employment. The return of children to school and of house-wives in running a house-hold was similarly gratifying. We conclude on both social and economic grounds that renal transplantation is fully justified as a therapeutic procedure.—(S.A. Tomlinson, *et al*, in *Brit. Med. Jour.*, 7-12-1974).



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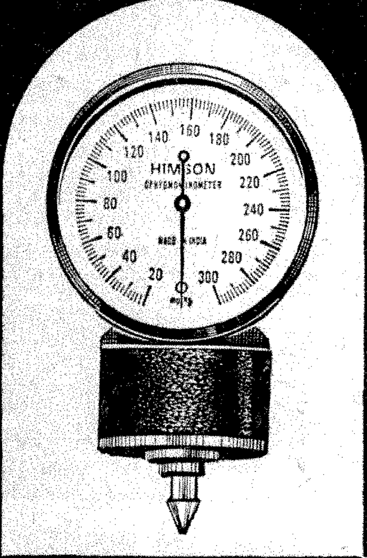

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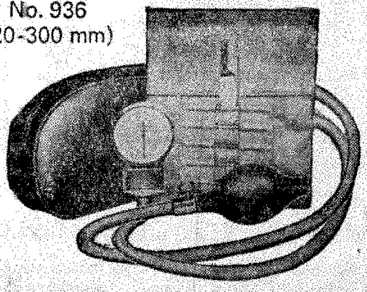

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The Antiseptic

Vol. 72 | SEPTEMBER 1975 | No. 9

Editorial

THE RESURGENCE OF MALARIA IN TAMIL NADU ALSO IN NEARLY THE WHOLE OF INDIA

MALARIA has staged a come back and is in full swing. Nearly 100 cases of malaria have been reported in the City's General Hospital alone during July and fifty cases were registered in the first 6 days of August. The number must have greatly increased since then as we are writing this Editorial (and perhaps even more when the journal is publised). This resurgence is, we understand from authentic reports published in July last, not confined to Tamil Nadu and other States of India alone, but has occurred in W.H.O's South East Asia region–only Mongolia and Korea being so far free. Because India's population dominates that of South East Asia, India accounts for 75% of the cases recorded in the region.

Talking of Madras City Dr. A. L. ANNAMALAI, Superintendent of the Govt. General Hospital stated to a Press Reporter a few weeks ago that Malaria had been completely eradicated in the City, the only affected area was in the Sembiam Colony where the repatriates from Burma are living. This is quite a rosy picture but we hear of cases of fever (usually explained "Flu"—) in almost of every part of the City and they do not all go to the General Hospital. Many of these may be cases of Malaria.

From the account of widespread resurgence of this fever, by Dr. PATTNAYIK, the Director of the National Malaria Eradication Programme, to the staff reporter of a distinguished contemporary we learn that the number of confirmed Malaria cases was about 2½ million in 1974. Though our data for 1975 are incomplete we estimate that about 5 lakhs of people suffered in the first half of this year; most of the cases occurred in the Central Indian States—Bihar, Madhya Pradesh, Rajasthan, Gujarat and Maharashtra and the eastern sector Assam, Meghalaya, Orissa, etc.

Malaria had always been a predominantly rural problem. This time, however, several towns and cities have also been affected. Fortunately, the mortality rate is still very low. The two malaria parasite species responsible for the disease in India are *Plasmodium vivax* and *P. Falciparum*. The former is benign but the latter produces the malignant type of malaria that can prove fatal. At present, the proportion of *P. Falciparum* to *P. Vivax* is low, but as the malaria positive cases increase, so will the proportion of *Falciparum* malaria—and the number of deaths. Last year, for the first time in nearly a decade, 3 deaths from malaria were reported.

The first phase (1953—1958) of the programme was aimed at controlling (not eradicating) the problem, and was judged a success.

Encouraged by the good results, the Government converted the control scheme into the National Malaria Eradication Programme (NMEP) in 1958. It objective was to protect the entire population of India, and by phases, to eradicate the disease in 7 to 9 years.

The malaria fighting strategy was based on a combined attack on the vector (to interrupt disease transmission) and the parasite (to eradicate the human reservoir of infection). This involved the use of insecticides against the mosquito, and case detection and radical treatment. When no more indigenous cases appeared, the unit went into the "maintenance phase" and was handed over to the State Government for continuation of malaria vigilance activities.

The NMEP thus covered the entire country and its continuous to be the most massive health project of the Indian Government.

Today we estimate there are some 2½ million cases in the country. The reasons for this are many :—Administrative, operational financial and technical. From 1965, with the blockage of the Suez Canal, DDT supplies from the United States could not reach in time and could not be sprayed during the transmission periods. This resulted in small focal outbreaks of malaria in the maintenance and consolidation areas.

"In 1969 free supply of DDT was stopped, and the Government of India began buying the insecticide on long-term loan agreement. There was no advance or regular supply of the insecticide till 1972. Using the stocks accumulated in 1971—72, we were able to arrest the rising trend of the positive cases in 1973. But in 1974 came the oil crisis, and our hopes were completely shattered. Insecticides are petroleum-based products. With the price of oil, the price of insecticides also rocketed. For example, the cost of DDT rose from Rs. 3,000 per metric tonne in 1972 to Rs. 12,000 in 1975 ; BHC (benzene hexachloride), another pesticide, from Rs. 1,700 to Rs. 6,000 a metric tonne and malathion (an organe-phosphorous compound) from Rs. 6,000 to Rs. 16,000 a metric tonne. Prolonged spraying with DDT, malaria carrying mosquitoes (particularly Anopheles Stephensi and A. Culcifacies) have become resistant to the insecticide in large areas. A switch from the cheaper DDT to more expensive insecticides like malathion was made and the operational costs have gone up".

A new problem which has cropped up is that of a parasite resistance to anti-malarial drugs, particularly chloroquine. Until recently, we were happy that in India all the parasite species were sensitive to drugs. Now chloroquine-resistant strains have been reported from Assam, and alternate drugs have had to be provided.

The high costs of new vehicles and petrol required for spraying and surveillance work, and the frequent migration of populations from and to malarial regions are other major problems.

In view of these difficulties, two Government-appointed committees have thoroughly examined the malarial problem and based on their recommendations—and taking into account the shortage of resources—the strategy is being modified. It is felt that we should now concentrate anti-malarial measures in 3 priority areas :—Where *falciparum* malaria is prevalent, where major industrial and agricultural projects are located and where the infection rate is high. In other words, our objective would be to prevent deaths from malaria, to prevent loss in production of industrial goods and foodgrains and to interrupt disease transmission in the highly endemic regions. The method will continue to be insecticidal spraying plus domiciliary visits by surveillance workers.

Of the total health budget of the country (about Rs. 41 crores) the Malaria Eradication Programme gets the lion's share (Rs. 23 crores.) Our revised strategy under financial constraints is estimated to cost Rs. 45 crores annually. However, total control at this stage will involve an annual expenditure of at least Rs. 65 crores. Nearly Rs. 281 crores has been spent so far on the eradication programme.

We have given an exhaustive historical approach, and we wish to conclude that the Tamil Nadu Government's Health Department will lose no time in framing and implementing promptly preventive and curative measures against this scourge which is fast spreading in our State. It is not incorrect to say that the diversion of the antimosquito squad and Malaria Eradication Squads to other programmes committed with the less urgent problems has been one of the main reasons, for the resurgence of malaria in Madras City and other districts of Tamil Nadu.

GLEANINGS

MEDICINE AND THERAPEUTICS

Plummer - Vinson Syndrome—(M. Rosof, Bernard. W. Nagler. Richard, *New York State Jour. of Medicine*, Feb. 1975).

Dysphagia is perhaps one of the most specific symptoms emanating from the gastrointestinal tract; it almost always signifies disease. Its evaluation should always include radiography, including cinefluoroscopic studies, esophagoscopy, and esophageal motility studies, when available. The relationship of dysphagia to iron deficiency anemia has been well described as Plummer-Vinson syndrome, Paterson-Kelly syndrome, or sideropenic dysphagia. Often only the most careful studies will delineate the presence of the web and clarify a lingering clinical problem. Frequent review of this syndrome is therefore warranted.

Sideropenic dysphagia or Plummer Vinson syndrome refers to an iron deficiency anemia, and to dysphagia secondary to an intrinsic web in the upper esophagus. The web usually lies just beyond the level of the crico-pharyngeal muscle. Histologic sections usually reveal chronic inflammatory tissue with normal squamous epithelium.

The majority of patients with the Plummer-Vinson syndrome are women with approximately 10 per cent occurring in men. In discussing the epidemiology of this syndrome, Elwood *et al*, point out the increased incidence in the northern hemisphere, particularly in the northern latitudes. The atrophic mucosal findings in the tongue and oropharynx, in addition to the proposed geographic location of this syndrome, bring to mind a similarity with pernicious anemia. This has been pointed out by Seaman and is further strengthened by the frequent findings of achlorhydria.

The etiologic relationship of the iron deficiency to the presence of the web remains in question. Indeed, the finding of an upper esophageal web is more common in the absence of iron deficiency. In a swedish study by Wynder *et al*, they note the presence of anemia in 46·5 per cent of patients at the time of evaluation of the symptom of dysphagia. The length of time the anemia has been present prior to developing dysphagia remains an unanswered question. It has been reasonable to assume that it is the dysphagia that leads to decreased intake of iron containing food, particularly meat, thereby producing the anemia. Several factors, however, point to the etiologic significance of the anemia. Anemia has been noted in many reports to be present prior to dysphagia, iron therapy will improve the symptom of dysphagia without dilatation of the esophagus; dysphagia often develops following iron deficiency anemia secondary to gastrointestinal blood loss from a source other than the esophagus.

Even the most careful study of the barium filled esophagus fluoroscopically is not as helpful in establishing the diagnosis as is a cinefluroscopic examination. A web on the lateral wall anteriorly, below the level of the crico-pharyngeal muscle, may elude even the most careful radiologist.

Pertussis vaccine in diabetics requiring high dosage insulin—(Dhar, H.A., *et al*, *The British Journal of Clinical Practice*, 5 May, 1975).

We now report the results of a preliminary clinical trial of B. pertussis in patients with diabetes mellitus who were resistant to insulin therapy. A preliminary note has already been published.

All the patients were collected from the Diabetic Clinic of K. E. M. Hospital, Bombay. By definition, insulin resistant diabetics are those whose requirements of insulin are more than 200 units for more than 48 hours in the absence of infection, endocrinopathy or ketosis. These patients whose requirements of insulin are between 100 and 200 units are termed partially resistant diabetics.

Patients were selected for trial only if their postprandial blood sugar values were persistantly higher than 200mg./100ml. (Folin and Wu's method). At the end of a week the patients were given a single dose of 2ml. of pertussis vaccine (Glaxo) by deep intramuscular injection. The postprandial blood sugar was measured every day for 10 consecutive days. Later on, the post lunch blood sugar was estimated biweekly for 6 weeks. Throughout the trial the dosage of insulin remained the same except when patients developed hypoglycæmia, in which case the dose was appropriately reduced.

So far, pertussis vaccine has not been used for insulin resistant diabetes in human beings. In experimental animals encouraging results were observed and so we were prompted to study its efficiency in human diabetics on an experimental basis. Our experience in a small pilot study has been encouraging. The vaccine succeed in reducing blood sugar values to normal in 16 of 20 cases. In 2 cases the blood sugar values came down considerably though not to normal values. In 2 cases it did not help the patients at all. These patients did not respond to a second dose of pertussis vaccine either. In those patients who responded to treatment (16) the maximum fall in blood-sugar occurred on the first day in 2 cases, second day in 2 cases, fourth day in 6 cases, fifth day in 4 cases and sixth day in 2 cases. Thus in all cases beneficial effect was observed in less than a week. The duration of the hypoglycæmic effect was variable. In 12 cases it lasted over 3 weeks whereas in 2 it had a short lived effect (a week only). In the remaining 2 cases the hypoglycæmic effect lasted for 9—21 days. The maximum duration was 6 weeks (4 cases). In 2 cases the hypoglycæmic effect lasted 6 months. The second dose of pertussis vaccine succeeded in reducing the blood sugar level in 4 of cases. In these 4 cases the effect persisted for 12—16 days.

The therapeutic effect was temporary usually lasting for 3—6 weeks. The vaccine helps to temporarily overcome insulin resistance and reduces the requirements of insulin. There were no side effects. The mode of action is being studied.

OBSTETRICS AND GYNÆCOLOGY

Treatment of vaginal discharge with yoghurt.—(Gunston, K. D., and Fairbrother, P. F., *S. A. Medical Journal* 12 April, 1975).

Lactobacilli normally found in the vagina seem to play an important role in maintaining the acidity of the vaginal secretion, and have an inhibitory effect on pyogenic bacteria. Yoghurt is a mixture of lactobacilli and nutrient, and hence should resemble the normal vaginal milieu. It is felt that if yoghurt is applied to a disturbed vaginal milieu, it should, by being the dominant inhabitant of the vagina for a time, allow a normal equilibrium to be re-established.

With this in mind, a pilot study was undertaken to establish whether yoghurt, injected vaginally, could be used to treat vaginal discharge.

Twenty-five patients were included in the trial. The following categories of patients were excluded: patients who withheld their consent; patients who had a positive culture for gonococci; pregnant patients who might deliver soon; patients with viral infections; and patients with a doubtful or positive smear for malignancy, since their inclusion in the trial may have delayed treatment.

The patients were supplied with a container of commercial yoghurt and a 5 ml. syringe, and were instructed to inject 3 ml. of the yoghurt vaginally twice daily for a week, and twice weekly for a further 2 weeks. A return visit for assessment was made after 6 weeks, *viz* 3 weeks after completion of treatment.

The application of yoghurt to the vaginal epithelium significantly decreased the volume of discharge, the subjective assessment and the presence of vaginitis, hence, clinically, an improvement was achieved. Microscopically a significant decrease in the pus count was achieved, but there was no alteration in the number of T. Vaginalis organisms.

Judging by this pilot study, the described treatment seems to be reasonable but further study is required regarding the following points: recurrence rates after 6 months and after 12 months adequate control trial of this treatment as compared with the usual treatment of vaginal discharge; a more prolonged test of both patient acceptability and possible complications or hypersensitivity to milk products.

Although a significant change has been produced by the application of yoghurt, a further trial comparing yoghurt with acidification alone, would demonstrate the superiority or otherwise of lactobacilli and acidity versus acidity alone.

In the presence of T. Vaginalis infestation the addition of oral metronidazole or equivalent antitrichomonal therapy is necessary, since the yoghurt treatment was ineffective in reducing T. Vaginalis infection.

REVIEWS OF BOOKS

A Companion to Medical Studies—(In Three Volumes)—Volume 3, Medicine, Surgery, Systemic Pathology, Obstetrics Psychiatry. Pædiatrics and Community medicine—Parts I and II—Editors-in-Chief, R. PASSMORE and J.S. ROBSON, Published by Blackwell Scientific Publications Oxford London Edinburgh Melbourne.

[Price of each of the 2 Volumes is £. 6 each.]

Medical practice covers a wide range of activities and this constitutes both its attraction and its challenge. Of first importance is the primary diagnosis and treatment of individual illness and injuries. Secondly, there is the recognition of the seriously ill and their, care, usually undertaken by specialists in hospital.

As Mrs. Stevens comments, few of the credulous public could then have benefited from the learned physicians as their efforts were largely, if not exclusively, devoted to royalty and the wealthy.

However, the Edinburgh College was, from its early years, more closely associated with the University, and it played a dominant role in establishing the Edinburgh Royal infirmary and its associated dispensaries, one of the early voluntary hospitals which cared for the poor.

It is a *cliche* to state that medicine is an art as well as a science. The student who has struggled through volumes 1 and 2 of *'The Companion'* will be aware of the scientific background to modern medicine; there is more to come in this volume, for clinical science is a well established discipline with its own methods. The practice of medicine depends on scientific knowledge, without which modern doctors would be no better than kindly and tolerant witch doctors, but it also depends on methods of thought and analysis which are not subject to the usual criteria of the experimental and observational sciences.

Clinical medicine involves a personal relationship between patient and doctor, and both the diagnosis and treatment of a disease and treatment of a disease are influenced by the success or failure of this relationship. Diagnosis depends on *three* methods, the taking of the patient's history, his physical examination, and laboratory investigations. All three are important but, in a hypothetical situation, if an experienced doctor were allowed one method only, his choice would be history-taking. In a large proportion of cases, the history suggests the diagnosis which subsequent physical and laboratory examinations confirm and often make more exact.

Personal factors and understanding are also important in choosing between two lines of treatment. Rest in bed is always beneficial for a patient with an active peptic ulcer and is often more effective if the patient is admitted to hospital; yet admission to hospital may do more harm than good in the case of an anxious mother, who is always thinking about who is caring for her children.

Obstetricians are sometimes faced with the problem in pregnancy, when one line of treatment is best for the mother and another for her baby.

The medical student of today often appears to have little time for general reading. Yet all students and doctors should make time to read widely. Some of the great writers such as Tchehov, Rabelais and Somerset Maugham were themselves doctors. Others, such as George Eliot Sinclair Lewis and Alexander Solzhenitsyn, have been at great pains to become accurately informed on medical matters; all have experience and insight into the problems of sickness as have some of the victims of disease, whether doctors or not, who have written of their own illnesses.

The contributions published in these two volumes are from eminent medicalmen largely from Edinburgh; Surrey and other counties of England have also been represented in the authorship. Both these volumes are reported to have been well received throughout the English speaking world and have already been translated into several other languages. This publication covers the fields of medical, surgical and obstetric practice and their associated science-based disciplines and also community health.

An undergraduate student should find in these volumes a sufficiently full account of all the common diseases and their underlying pathology to enable him to diagnose them and to undertake treatment with the help of the appropriate specialist. Due to effective means of prevention, diseases once common are now seldom seen in teaching hospitals; however, it is important for the student to become familiar with them, of necessity mainly by reading, because failure to recognize them may have disastrous consequences. Smallpox is the classical example, but there are many others.

Probably over 10,000 diseases have been described but few doctors can claim familiarity with more than about 500 of them. Many of the remainder are very rare This volume contains brief notes of many of these. It is a misfortune for a patient to have a rare disease, because the chance that the diagnosis will be overlooked and treatment delayed is much greater than with a common diseases.

Although written primarily for undergraduates, doctors of all ages will find these volumes immensely useful. Medicine is nowadays practised and taught by specialists, general practitioners being regarded as specialists in family doctoring. However, no specialist works in isolation. He must know something of the problems, methods of thought and techniques of investigation and treatment used by his colleagues in other fields.

Every doctor should know this language sufficiently well to enable him to have intelligent conversations with specialist colleagues in any field, and to be able to translate their opinions into plain English for the benefit of patients, relatives and the community.

These two volumes are profusely illustrated with uptodate illustrations of pathologic conditions met with in daily medical practice. Already mine is a very long review but I feel that even this is a very perfunctory performance in reviewing two bulky big volumes which cannot be handled for reading but should be placed really on the central table in a medical man's clinic and should be read or consulted by standing alongside the table.

T.N.S. RAGHAVACHARI.

CORRESPONDENCE

To the Editor, 'Antiseptic', Madras.

Query

Sir,

Kindly let me know the following points:—

(1) What is the best way to prevent the spread of Polio?

(2) Is Oral Polio Vaccine (O.P.V.) contra indicated in a recently diagnosed case of Polio (acute case)? If so after how much duration could O.P.V. be given in an acute case?

(3) What is the latest immunization schedule of O.P.V. in children and adults? Kindly also mention about booster doses in children and adults?

(4) Are corticosteroids dangerous in cases of Acute Polio? Are they indicated.

Punjab Building,
Deshbandhu Ward
Gondia, M.P.
11-7-1975.

B.D. Bagga.

Answer

Sir.

With reference to Dr. Bagga's letter, I would like to give the following answers:

(1) Best way to control the spread of Polio is to immunize the population and this is better achieved with Oral Polio Vaccine which gives "Herd Immunity".

(2) Any immunization schedule is contraindicated in any acute case. As such during acute stage of Polio it is better to avoid oral polio vaccine for about three months.

(3) Latest immunization schedule of Oral Polio Vaccine (O.P.V.) consists of five primary doses in the 3rd, 4th, 5th, 9th and 12th months after birth. The booster O.P.V. may be given one year after the last dose of primary schedule and a recall dose at the age of 5 years.

(4) This is a difficult question to answer. There are two schools of thought. One school says that corticosteroids are definitely beneficial during the acute stage and the other school denies it. But anyhow no harmful effect has been noticed by giving the steroid. My personal view is to give a short course of steroids for about 2-3 weeks with tetracycline coverage and then gradually to stop it.

The questioner is requested to read the following article for further reference.

Title of the article:—"Preventive Pædiatrics"

Month of Publication:—November 1972 issue of Antiseptic.

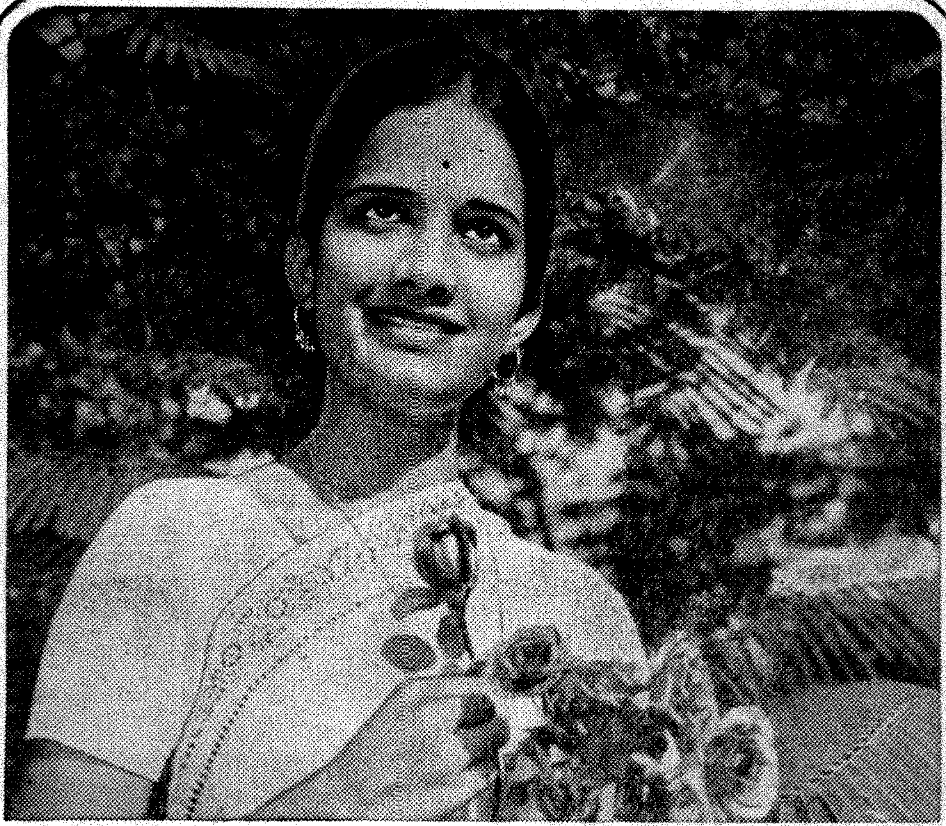
290, Thambu
Chetty Street,
Madras-1
19-8-1975.

Dr. U. Rama Rao,
m.b.b.s., d.c.h.

NEWS AND NOTES

Removal of Names of Registered Medical Practitioners Under Section 23 of the Maharashtra Medical Council Act, 1965

"All the Medical Practitioners who are registered with the Maharashtra Medical Council (Old Bombay Medical Council or Maharashtra Bombay Area Medical Council) on or before 31st December 1973 are requested to please note that the Maharashtra Medical Council had sent them a Notice of Renewal with the application form in July 1974, and those who did not apply in response to it were sent another notice on 18th September 1974. If they have not replied to any of the above notices for renewal of their registration, they are requested to contact the Registrar, Maharashtra Medical Council, Swadeshi Mills Estate, Next to Roxy Cinema, Tata Road, Mama Parmanand Marg, Bombay-400 004."



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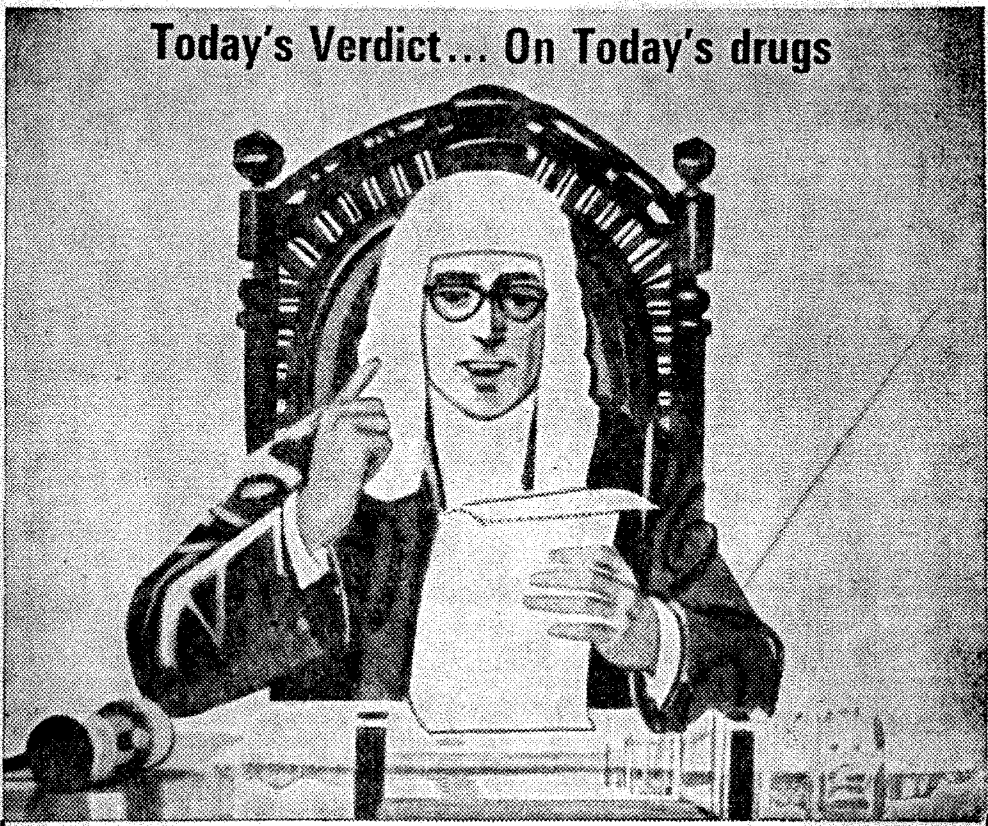
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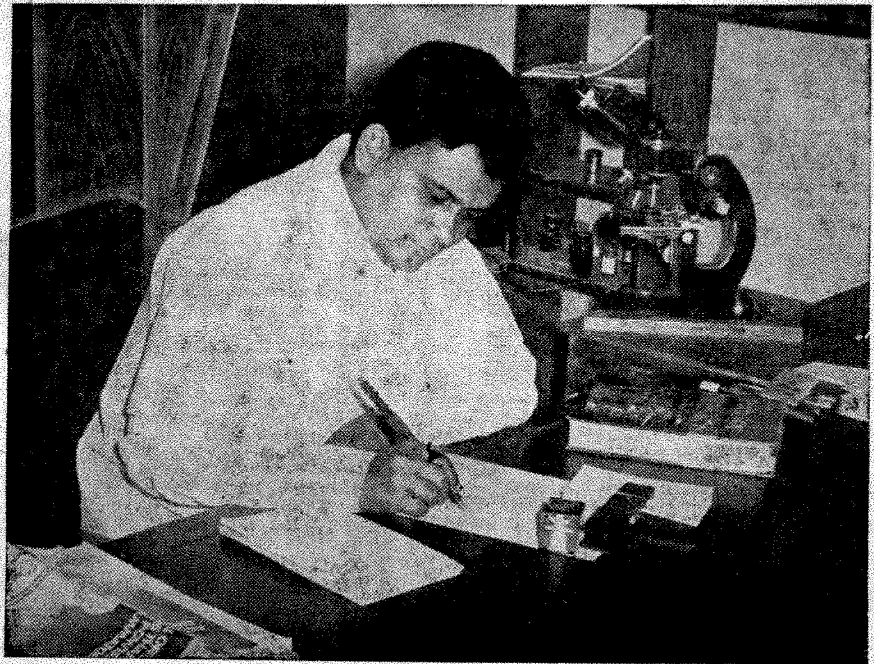

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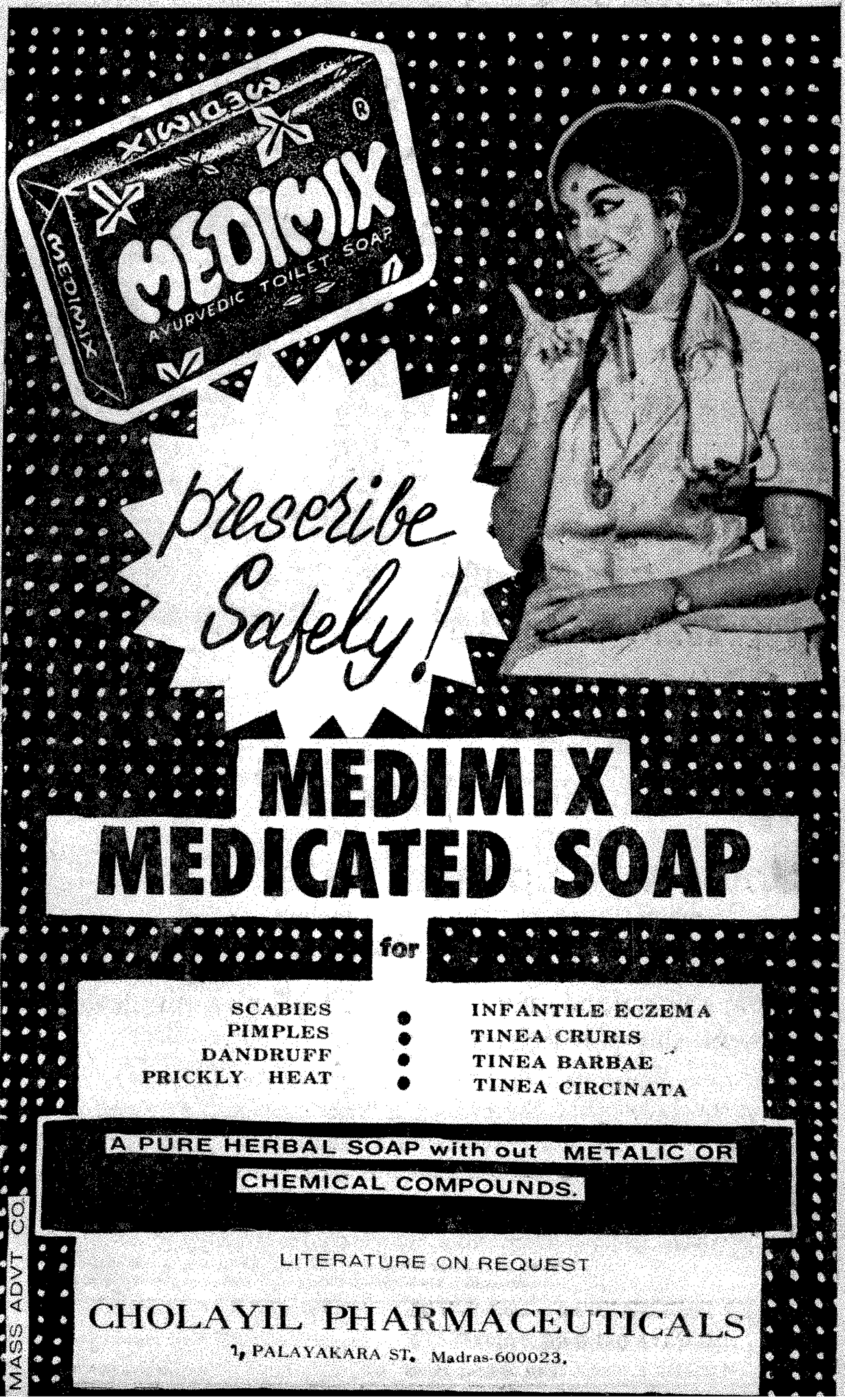

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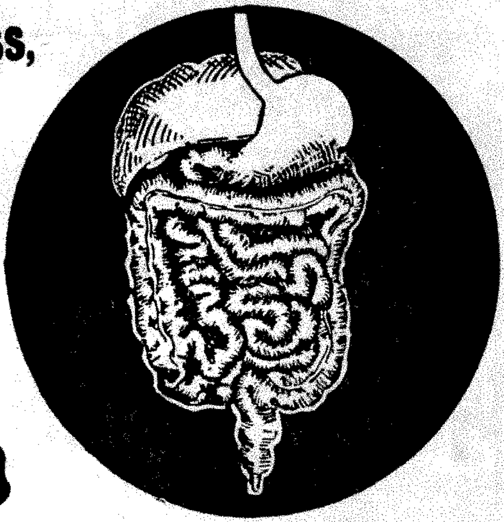

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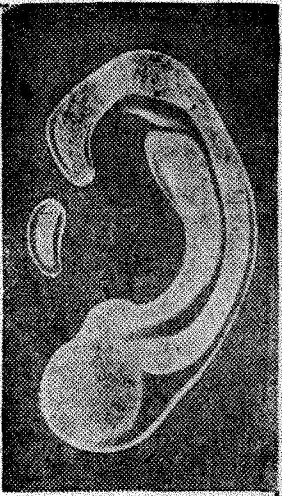

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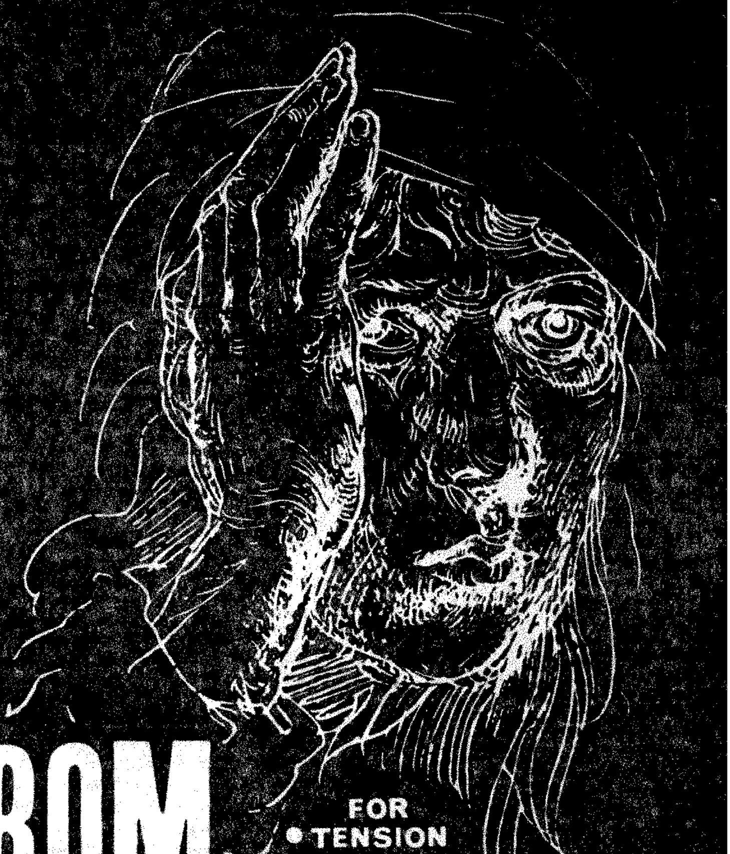

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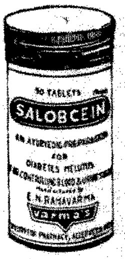

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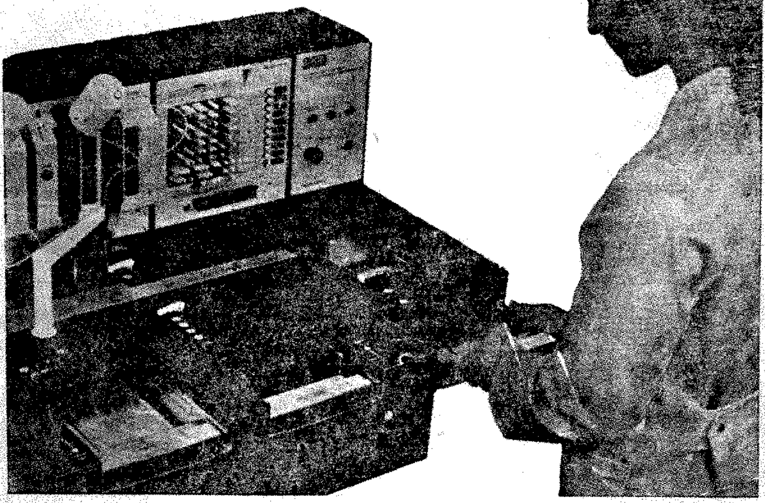

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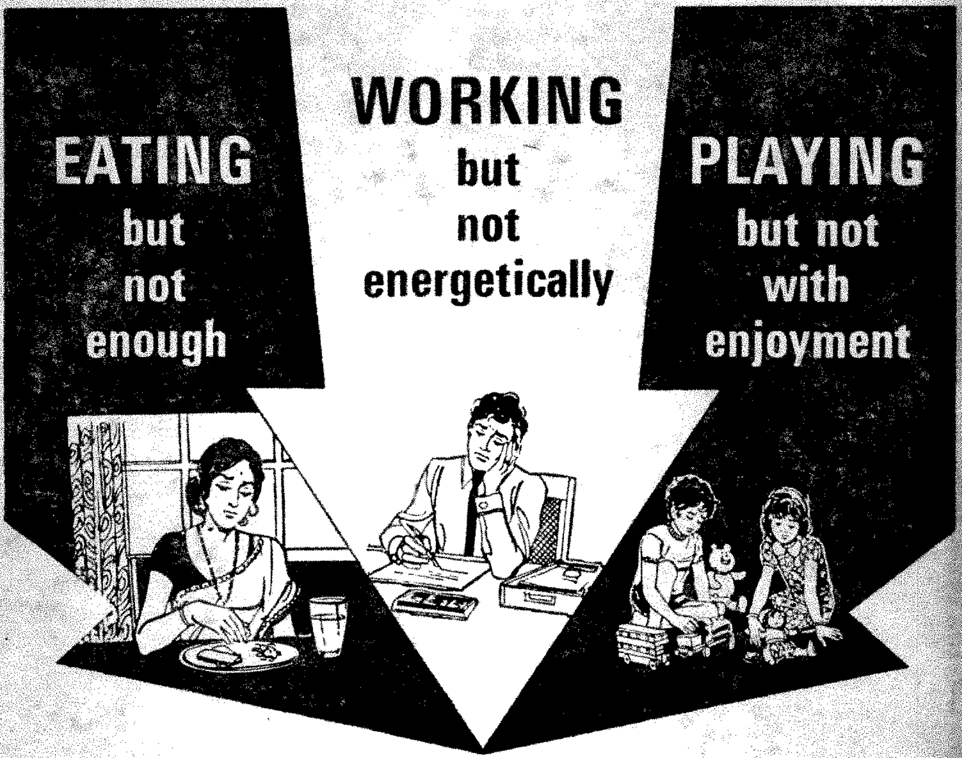

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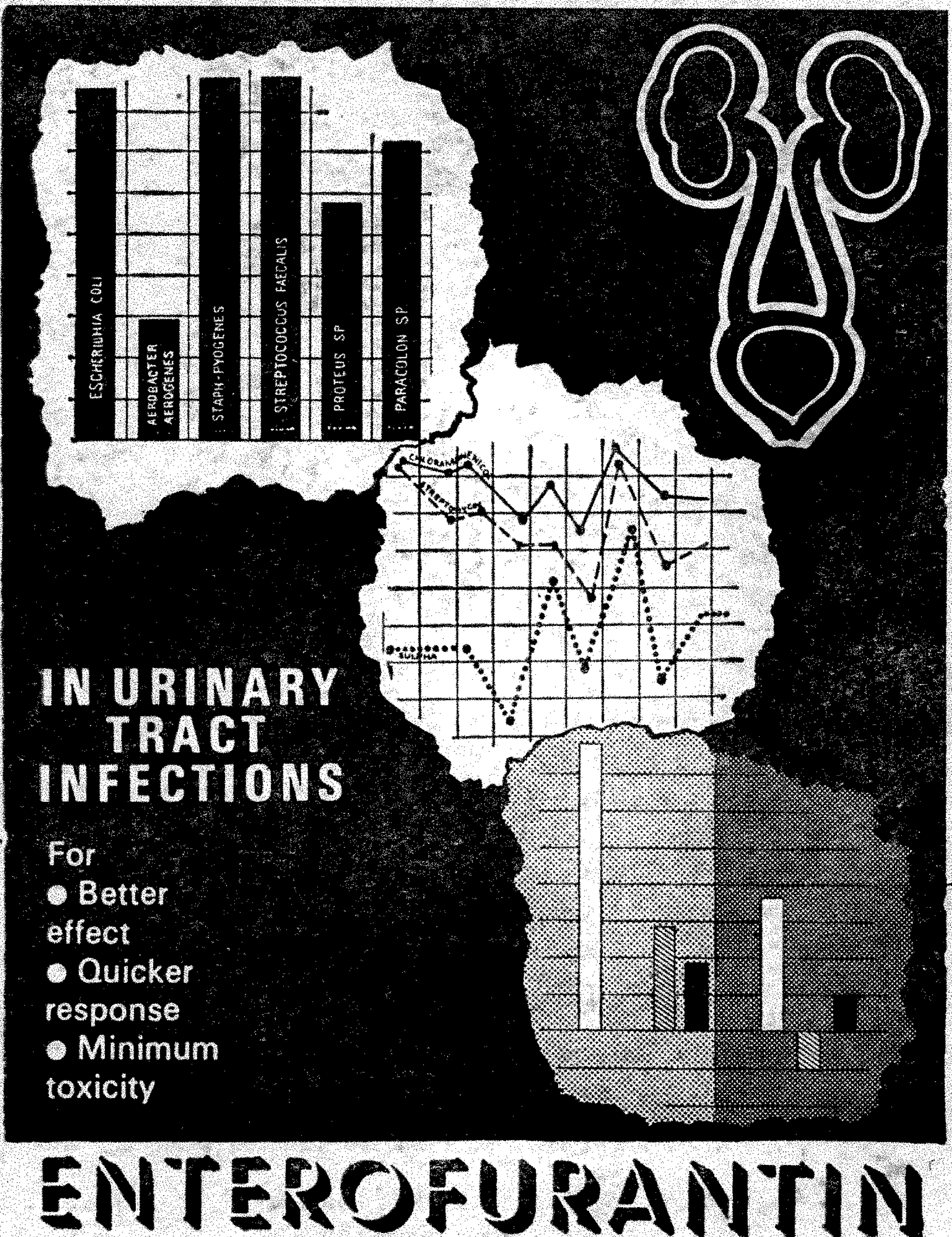

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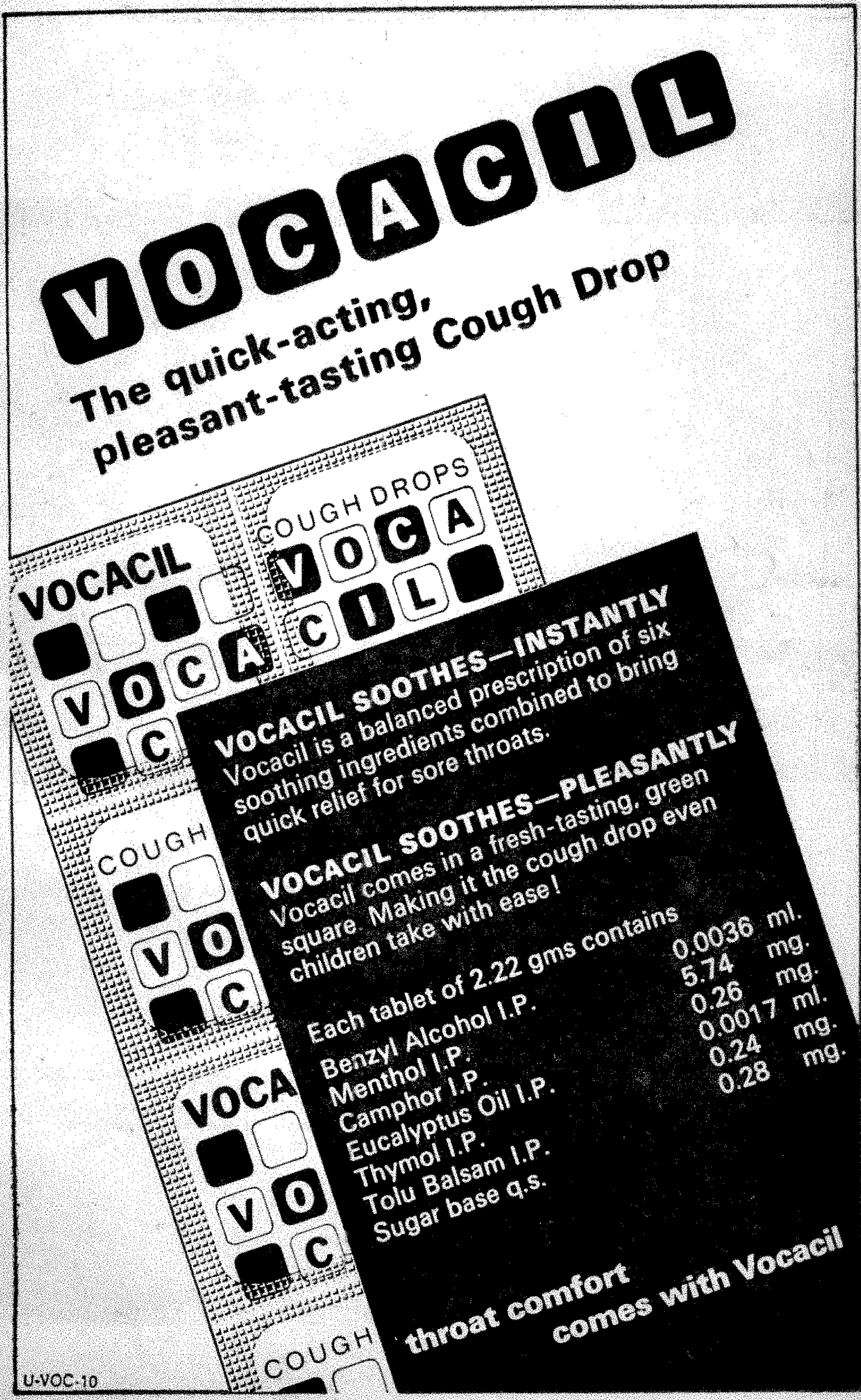

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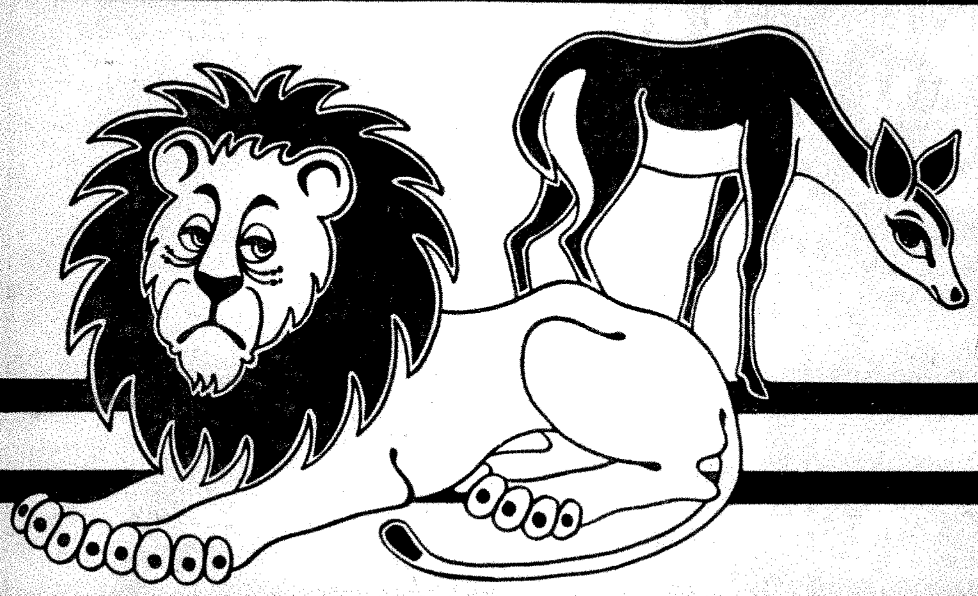

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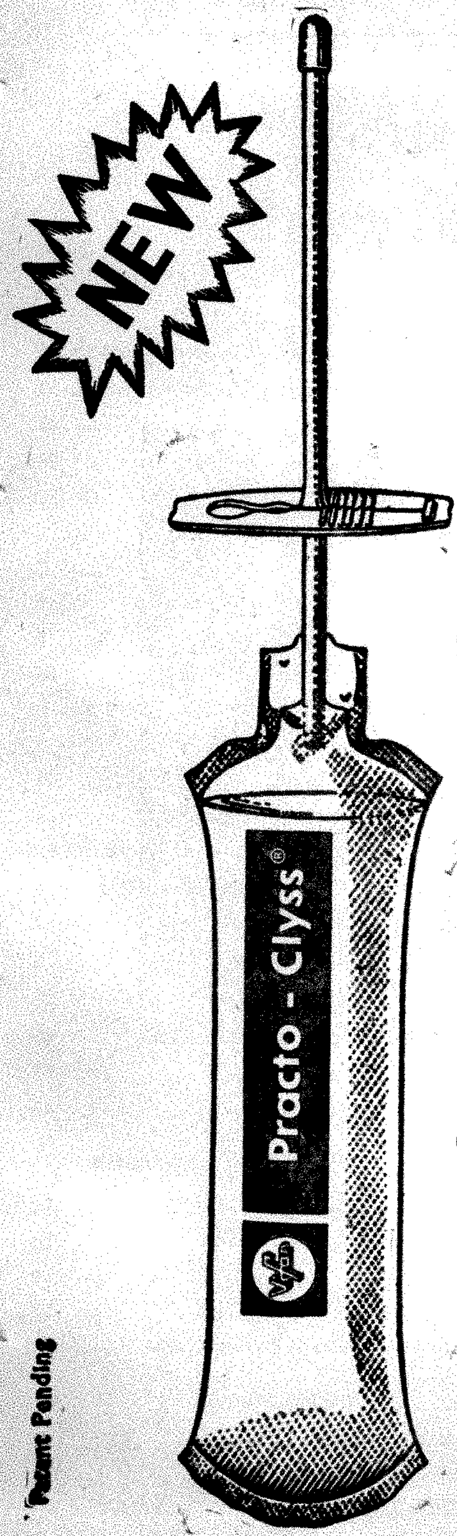

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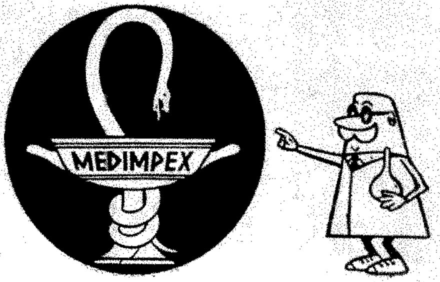
3 BROTHERS



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HYPERTENSION

Clonidine HCl. in
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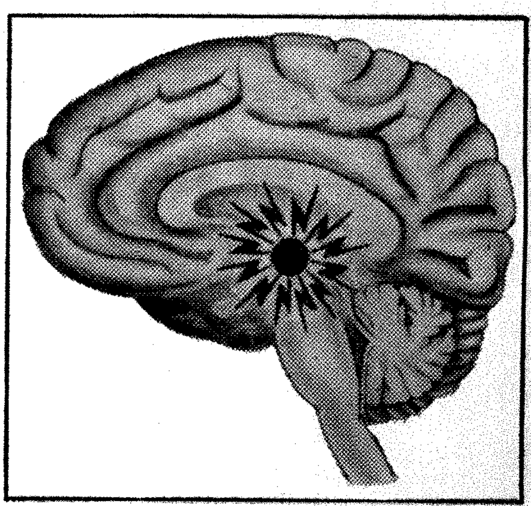
(Clonidine HCl. + Hydrochlorothiazide)

Centrally
Mediated
HYPOTENSIVE
Action



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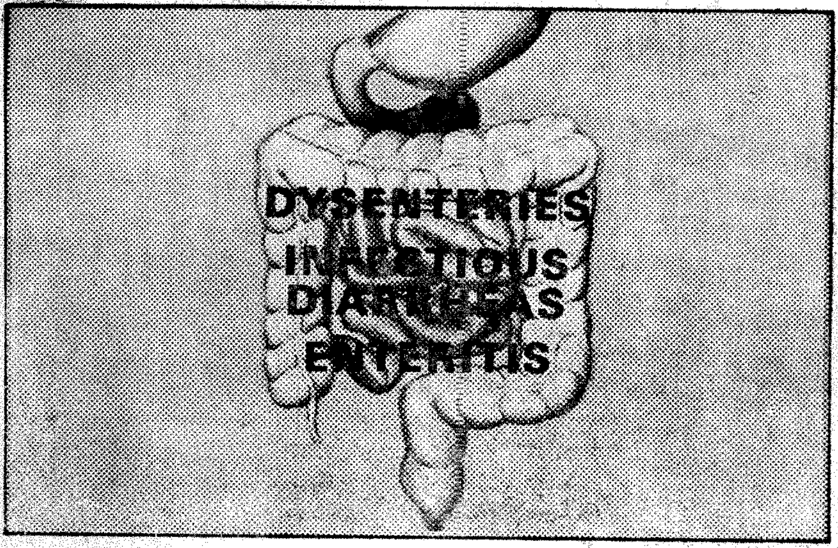

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The high level of antimicrobial activity in the intestinal lumen

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A powerful Anthelmintic in all types of worms.

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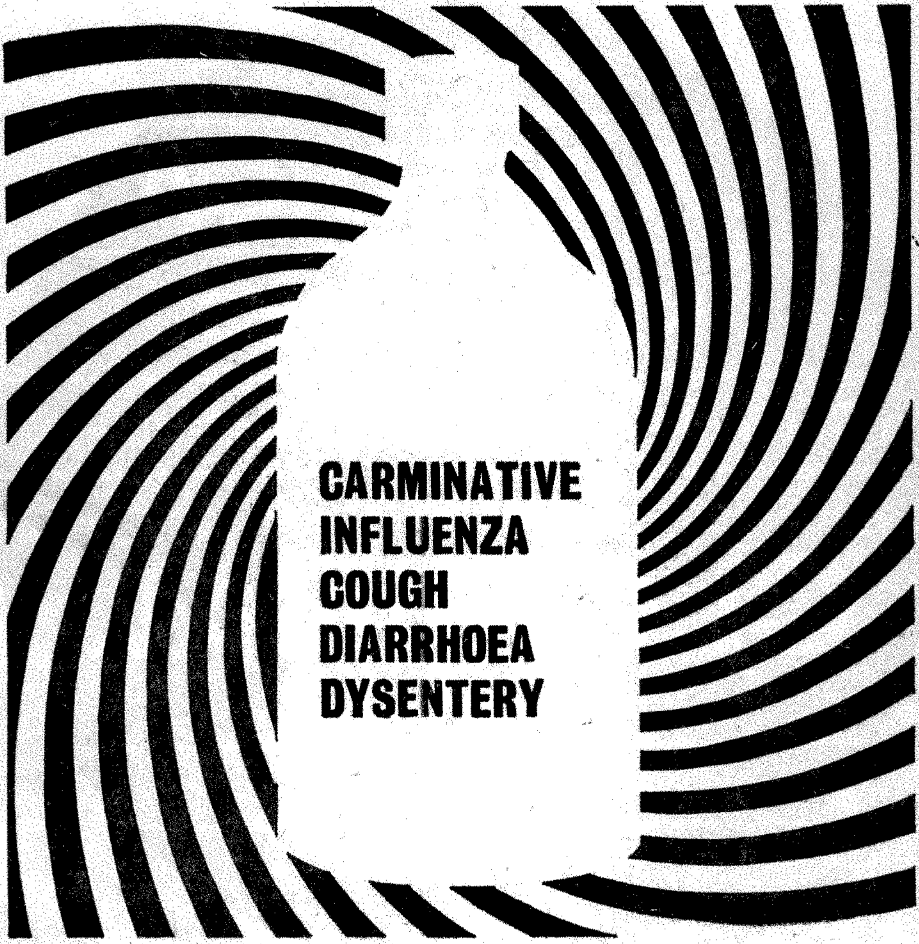

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concentrated mixtures

Effective, economical. Easy to dispense.
Just a teaspoonful with 28 ml. of water
makes an adult dose!

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PDS SP 2151

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(An Ovulatory Agent)
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the introduction
of the latest advance
in Hypnotics

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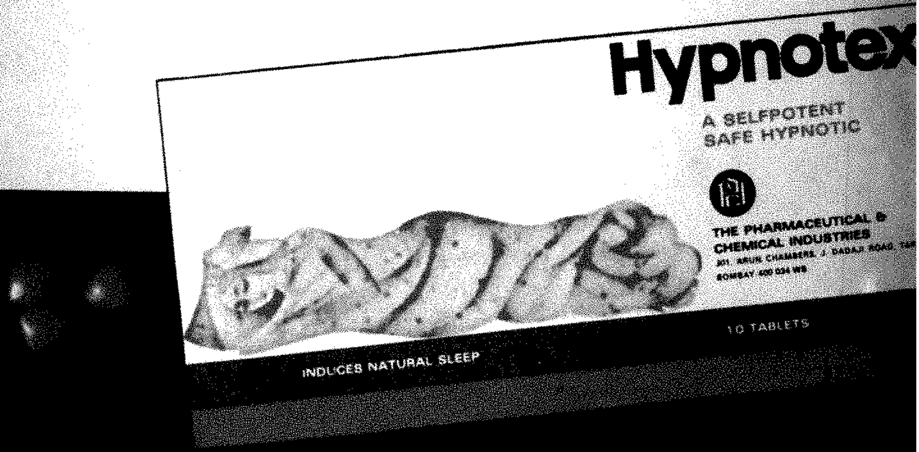

A NEW GENERATION OF BENZODIAZEPINES
WITH REMARKABLE HYPNOTIC PROPERTIES

...a single ingredient Hypnoti
...a safety first Hypnotic

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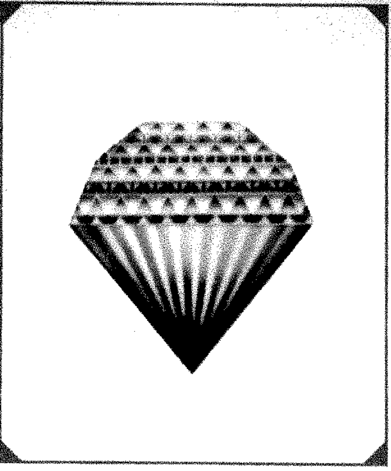
- [illegible]
- [illegible]

Duroxiline

(DOXYCYCLINE HYCLATE 100 MG)



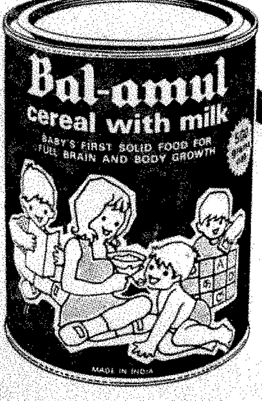
THE MULTIFACET MAJOR ANTIBIOTIC

- [illegible] day oral antibiotic
- [illegible] acting [illegible] Tetracycline
- [illegible] in all the tissues of the body
- [illegible] susceptible pathogens
- [illegible] antibacterial activity
- [illegible] not affected significantly by [illegible] food or milk products
- [illegible] of accumulation of antibiotic in [illegible] and freedom from further renal [illegible]
- [illegible] 500 mg. of [illegible]
  [illegible] 1000 mg. of [illegible]
  [illegible] 1000 mg. of Tetracycline

MARKETING DIVISION
THE PHARMACEUTICAL COMPANY OF INDIA
MANUFACTURED BY:

Balamul—a weaning food to help close the protein/calorie gap

United Nations Protein-Calorie Advisory Group's standards are fully met by BALAMUL



Balamul
cereal with milk
for full brain and body growth.
For babies from 3 months

Marketed by Gujarat Co-operative Milk Marketing Federation Ltd., Anand RADEUS/GCM-M-1

Escherichia coli
Pseudomonas aeruginosa
Staphylococcus aureus
Klebsiella species
Proteus species
Enterobacter

THE ANTIBIOTIC MOST
FREQUENTLY EFFECTIVE
AGAINST MAJOR
BACTERIAL INVADERS

Garamycin* Injection

“[Garamycin] has shown very good in vitro activity (96-99% sensitivity) against hospital strains of *Staphylococcus pyogenes, E. coli, Klebsiella-Enterobacter, Proteus* and *Ps. aeruginosa*, and 96-100% of multiple drug-resistant strains (streptomycin, chloramphenicol, tetracycline and ampicillin) were sensitive to [Garamycin]”

—Agarwal, K.C. and Chitkara, N.L.,
Proc. 1st Asian Symp. on Gentamicin, Dec. 10, 1973.

Discovered, developed and documented by Schering Corporation U.S.A.

SCHERING U.S.A.
SCHERING CORPORATION U.S.A.
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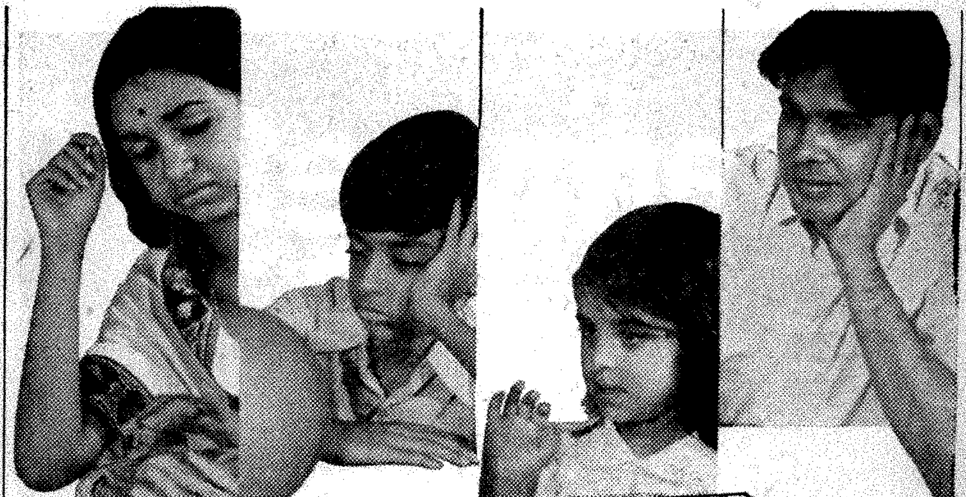
C. E. FULFORD (INDIA) PRIVATE LTD.
Oxford House, Apollo Bunder, Bombay-400 001
*Trademark

"GLOBE-175"



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A comprehensive dietary supplement... in metabolic, nutritional disorders anemia and convalescence

suxiphos®

stimulates mental and physical efficiency

100 ml.
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Tonic with multiple Glycerophosphates Vitamin B complex factors and Iron.
A deliciously flavoured nutritional supplement for increased vigour.
Made in India by FRANCO-INDIAN PHARMACEUTICALS PVT. LTD
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suxiphos

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Damycetin®
Chloramphenicol

YOUR KEY TO SUCCESS in the treatment of typhoid, paratyphoid, meningitis due to H. influenzae and infections resistant to other antibiotics.

DAMYCETIN may be used for the treatment of infections due to a large number of susceptible micro-organisms, when careful clinical assessment supplemented by laboratory studies indicate that the pathogenic organisms responsible for the disease are resistant to the commonly used tetracycline group of antibiotics or other antibiotics.

Packings:
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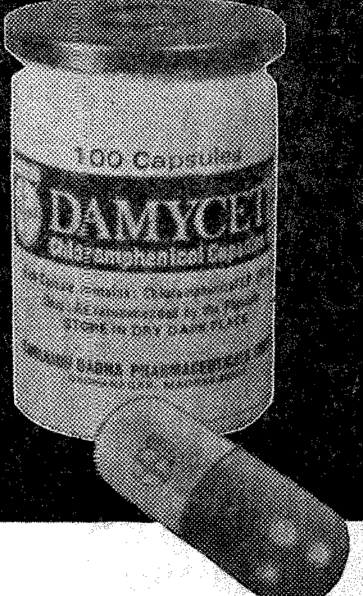

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A Concern for Nation's Health
TAMILNADU DADHA PHARMACEUTICALS LIMITED
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THE TASTIER WAY
to correct
IRON & CALCIUM
DEFICIENCY

Spencer's
FERRO CALCIUM

Contains minerals, carminatives
and cholagogues
IN A PALATABLE
GRAPE-JUICE BASE
Especially good for children
and ladies during pregnancy
and lactation.

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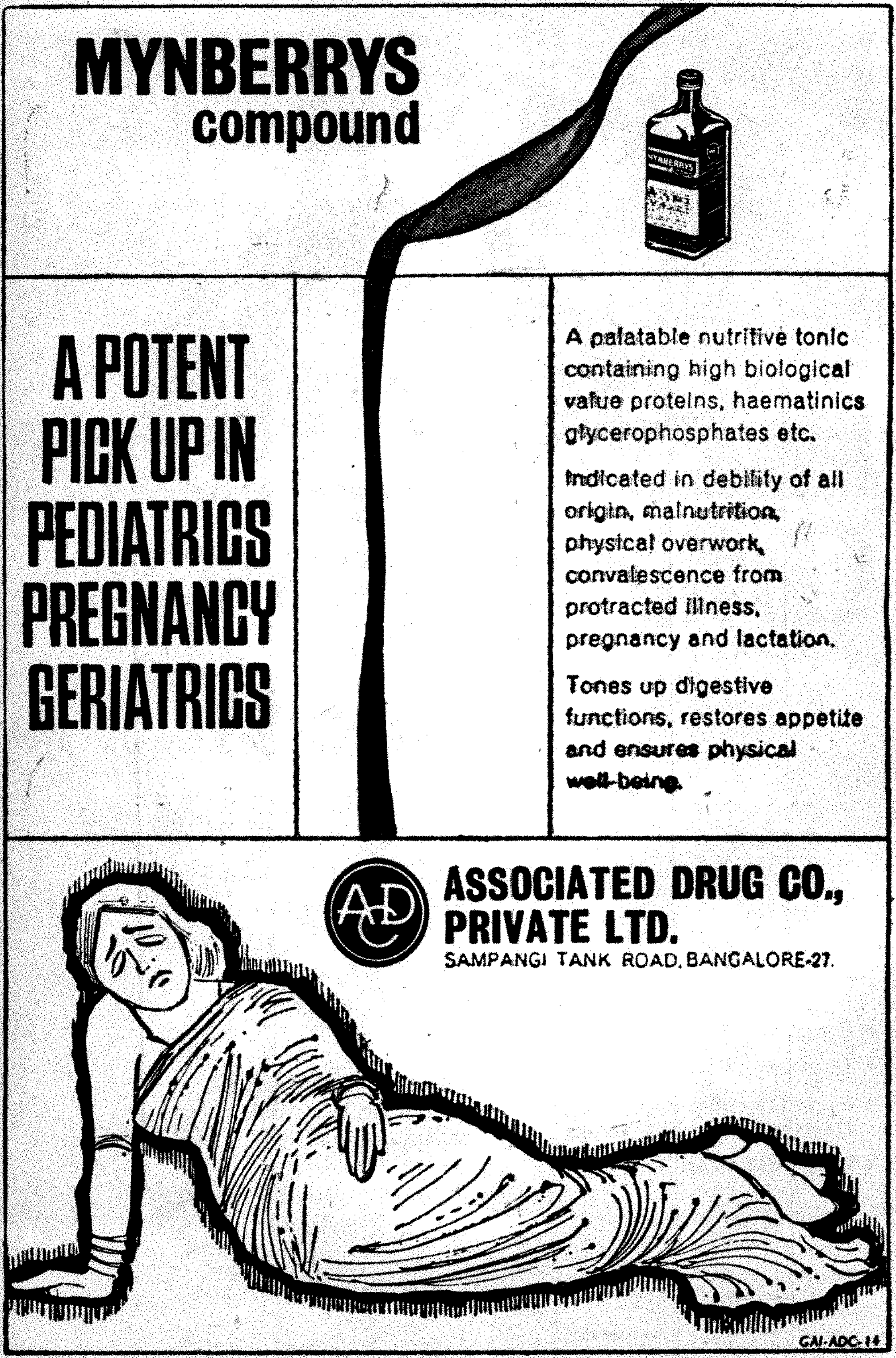

MYNBERRYS
compound

A POTENT PICK UP IN PEDIATRICS PREGNANCY GERIATRICS

A palatable nutritive tonic containing high biological value proteins, haematinics glycerophosphates etc.

Indicated in debility of all origin, malnutrition, physical overwork, convalescence from protracted illness, pregnancy and lactation.

Tones up digestive functions, restores appetite and ensures physical well-being.

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GAI-ADC-14

ANNOUNCING a NEW pleasant way to stop COUGH

Grilinctus®

EXPECTORANT • ANTI-ALLERGIC

In the treatment of cough the aim should be to reduce coughing so as to allow the patient mental and physical rest. "In this manner the act of coughing is reserved for the occasion when it can be really productive. A moribund or exhausted patient may be unable to cough."

(Goodman & Gilman, 2nd edition, page 1068)

- **Stops cough fast**
- **Soothes irritated mucosa**
- **Excretes irritating material from bronchial passages**
- **Does not cause sedation.**

100 ml. & 450 ml.

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IT SHOULD BE NUTRITIOUS, WELL-BALANCED, DIGESTIBLE AND FREELY AVAILABLE LIKE LEVER'S BABY FOOD

LEVER'S BABY FOOD is *specially made for Indian babies* and is formulated to meet their particular nutritional requirements. It contains additional nutrients—sodium iodide and iron, vitamin B_{12} and folic acid to protect the baby against deficiency illness common among babies in India.

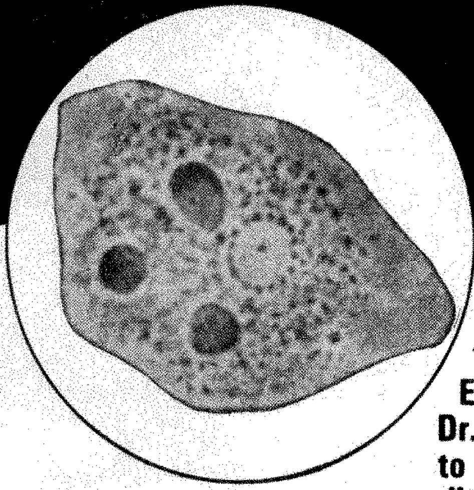
LEVER'S BABY FOOD has been *extensively tested and evaluated* in feeding trials at the World Health Organisation Pediatric Unit of a Bombay Hospital, and has received the unanimous approval of all pediatricians involved.

LEVER'S BABY FOOD is *freely available* so you can be sure that if you do recommend it—mothers will have no difficulty in finding it.

LEVER'S BABY FOOD —Specially made to nourish babies in India.

LINTAS-LBF. 24-592 (R)

A Quality Product by HINDUSTAN LEVER



1875-1975

A BATTLE OF 100 YEARS

In October 1975, an International Conference on Amebiasis is being held in Mexico city to commemorate the 100th Anniversary of the discovery of **Entameba histolytica, by Dr. F. Losch. We pay our tributes to Dr. Losch for this epochal discovery.**

Metrogyl*

Has now mastered this dreaded protozoa.

Metrogyl (Unique's Metronidazole)
Tablets—200 mg & 400 mg.

ALSO AVAILABLE AS METROGYL SYRUP
(each 10 ml contain metronidazole
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Chlordiazepoxide

FOR
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- APPREHENSION
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Imipramine Hcl.
25 mg.

Thymoleptic class of mood elevator and very useful in Nocternal Enuresis.

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A powerful

- antimycotic
- antibacterial
- antipruritic

Multifungin
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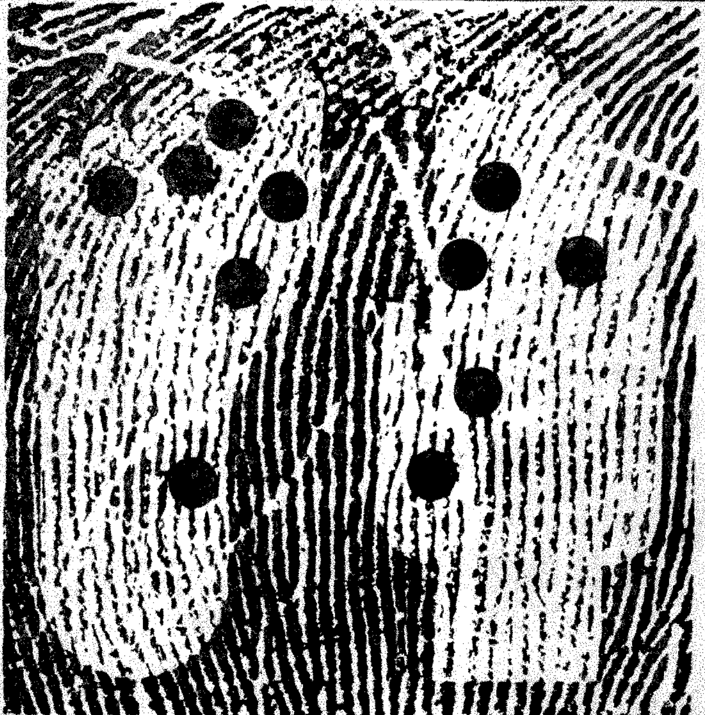
Multifungin-H

• Cream • Ointment • Solution • Powder

A range for greater selectivity
for the treatment of fungal skin infections



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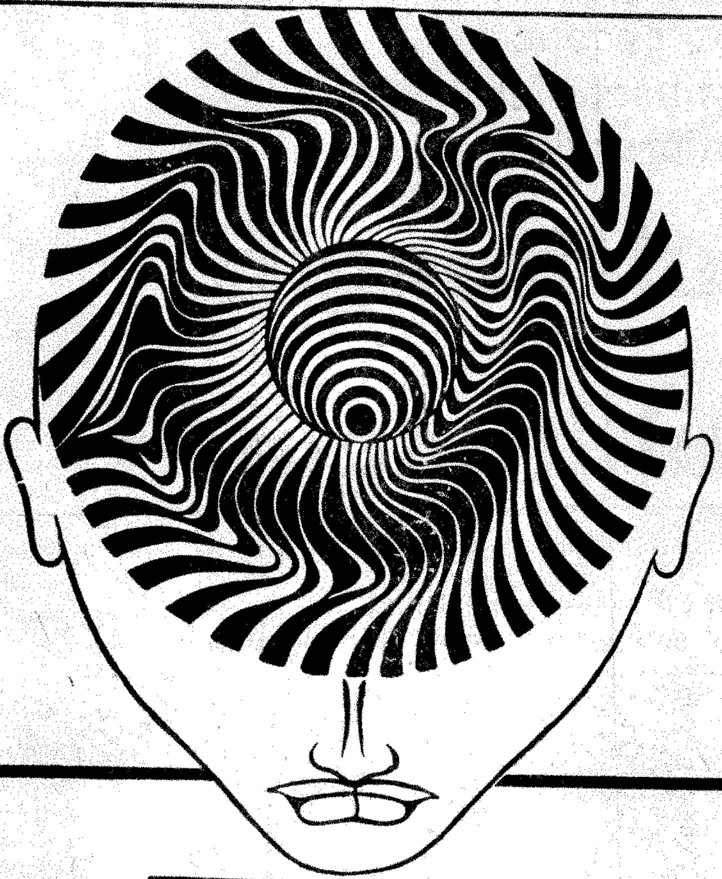
impact



FOR THE
SYMPTOMATIC
TREATMENT OF
VERTIGO
OF ANY AETIOLOGY

dilisan

- PROMPT ACTION
- NO DROWSINESS
- NO SIDE EFFECTS ARE EXPERIENCED WITH ITS USE

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Orange flavoured

• effective
• safe
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SYRUP OF HAEMOGLOBIN WITH VITAMIN B_{12}

"The highly potent Hb-formation property of this intake is demonstrated by its use as the sole treatment in the intense anaemias having 2,000,000 or even 1,000,000 RBCs per cubic millimeter of blood."

A Boudarel (Congo) MEDECINE D'AFRIQUE NOIRE.
VOL. XI-No. 3. MARCH 1964

**FRANCO-INDIAN
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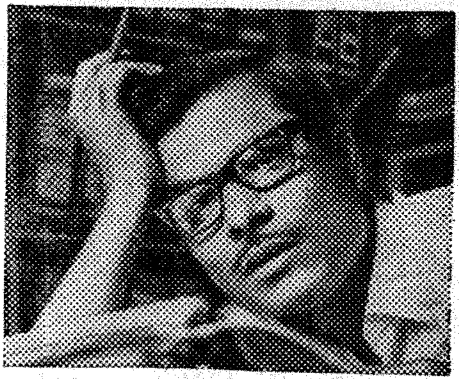
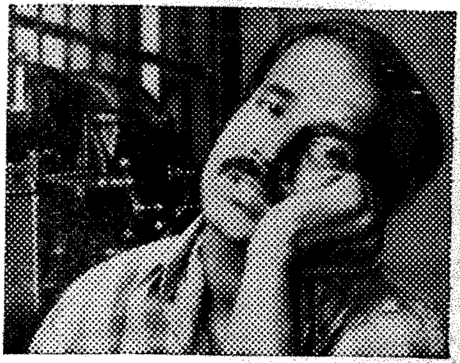
20, DR. E. MOSES ROAD, BOMBAY 400011



When
the hot summer
creates
energy crisis...



Docabolin

injects vigour and vitality

- Overcomes tiredness and exhaustion
- Stimulates appetite
- Improves blood picture
- Corrects low blood pressure
- Accelerates overall metabolism

COMPOSITION

Each 1 ml. contains :
17β-(3-phenylpropionyloxy)
oestr-4-en-3-one B.P. 25 mg.
21-(3-phenylpropionyloxy)
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Adults : One I.M. injection of 1 ml. every week for 4-6 weeks

Docabolin fills up the energy gap

Organon

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OGC-12

Today's Verdict... On Today's drugs

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UNIQUE'S OXYPHENBUTAZONE B.P. .. 100 mg TABLETS

the most effective anti-inflammatory agent

for

- SWELLING AND PAIN FOLLOWING TRAUMA, e.g. FRACTURE, DISLOCATION, SPRAIN
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DOXYLIN

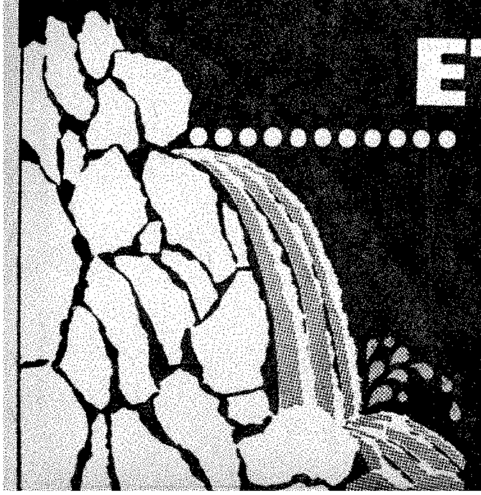
DOXYCYCLINE HCL.

THE ONCE-A-DAY ORAL ANTIBIOTIC

METHACID

INDOMETHACIN CAPSULES N.F.

- Rapidly resolves inflammation
- Relieves pain
- Increases mobility



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"REVOLUTIONARY CONCEPT IN DIURESIS"

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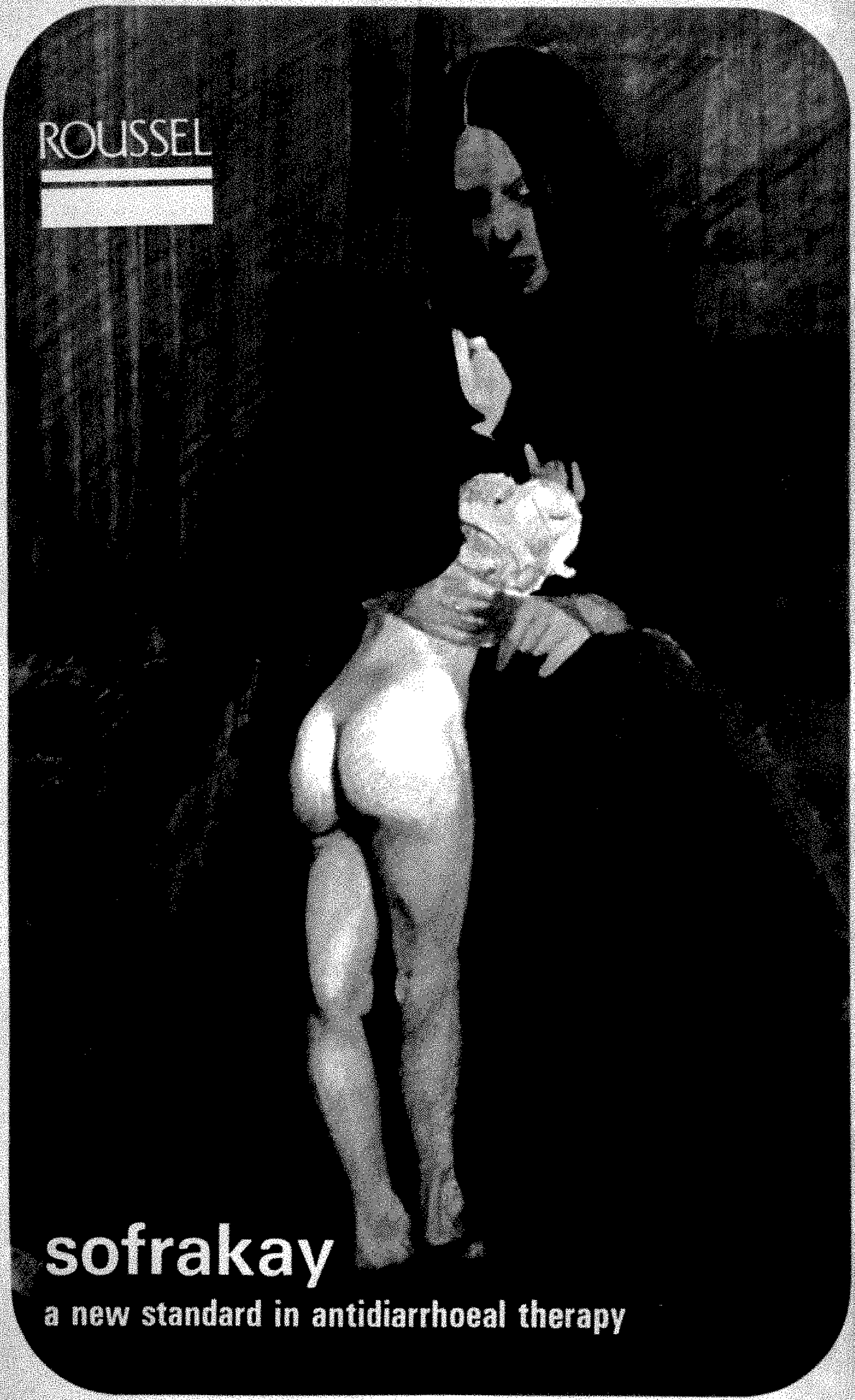

ROUSSEL
sofrakay
a new standard in antidiarrhoeal therapy

sofrakay suspension

SPECIFIC BACTERICIDAL ACTION

HIGH BACTERIAL SENSITIVITY
because never used before

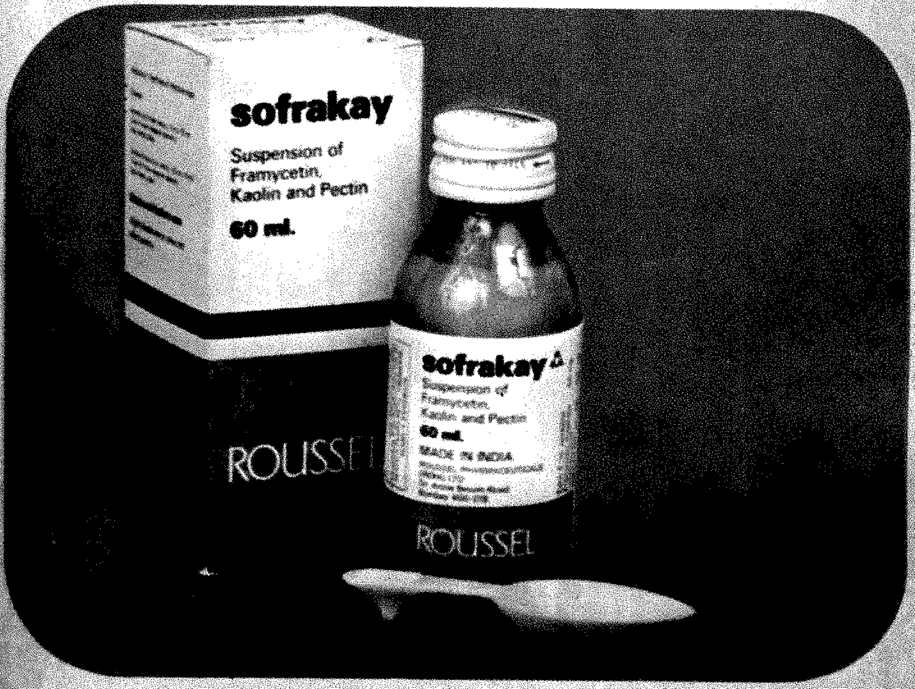
RAPID CONTROL

VIRTUALLY UNABSORBED
therefore safe

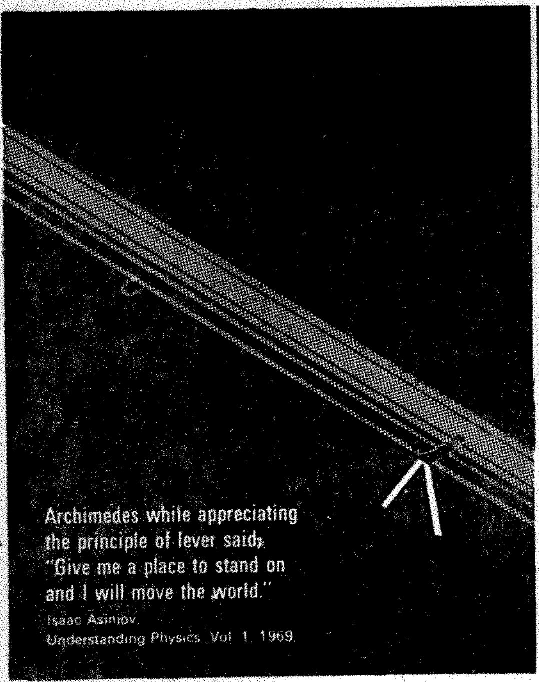
PLEASANT FLAVOUR
wins children's acceptance

"The administration of Framycetin (Soframycin) was attended by a rapid improvement in the patient's condition. Signs of dehydration quickly disappeared, vomiting stopped and the stools quickly returned to normal. The average duration of time for the diarrhoea to cease was 2.7 days."

W. ROBERTS, FRFPSG & JESSIE L. SHARP, MD, CHB, DPATH
The British Journal of Clinical Practice
(March 1961): Vol. 15 No. 3 p. 249



A new standard in antidiarrhoeal therapy



Archimedes while appreciating the principle of lever said, "Give me a place to stand on and I will move the world."
Isaac Asimov,
Understanding Physics, Vol 1, 1969.

"Just as a lever can move an object many times its own weight, so an enzyme can act upon and produce chemical changes in a mass of substance many, many times its own size and weight."
The Human Body
(Its Anatomy and Physiology),
Best & Taylor, 3rd Ed., P., 320.

For relief of discomforts of indigestion and flatulence.

Molzyme®
TABLETS

A combination of Digestants, Carminatives, Antiflatulents and Spasmolytic.

Indications:

- Indigestion or dyspepsias—carbohydrate or protein in origin
- Heartburn
- Gaseousness
- Convalescence
- As a supportive treatment in cardiac patients
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Neurodol-Fentyl
DROPERIDOL—FENTANYL INJECTIONS

A combination of
Droperidol and Fentanyl produces
NEUROLEPTANALGESIA (Intravenous anaesthesia)

DROPERIDOL
is a potent psychomotor sedative with the unique feature of producing psychic detachment of the patient from his environment; yet patient is co-operative on demand.

DROPERIDOL
is a strong anti-emetic and has alpha adrenergic blocking action.

FENTANYL
has thousand times the potency of pethidine on weight basis. Unlike pethidine vomiting and cardiovascular effects are not observed with Fentanyl.

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Spencer's SPENCOBIOL

DIRECTIONS:
Scrub entire body with soap and warm water. Apply lotion with cotton on all affected parts. After drying for 2 to 3 hours, wash again with soap and warm water. Repeat on alternate days.

Spencer's
SPENCOBIOL
(Benzyl Benzoate application I.P.)
100 ml.
Shake the bottle before use
Manufactured by:
SPENCER & CO. LTD.
153, MOUNT ROAD, MADRAS 2

CAUTION:
Do not apply on face.
Packing: 100 and 450 ml.

FORMULA:
Benzyl Benzoate I.P.—25% v/v (in emulsion base)

SPENCER & CO. LTD., Madras 600002

ADS SP 2164

Born Free...

free from any nutritional anaemia... thanks to Folinate-B12 Liquid: Iron-(Ferrous Fumarate) Folic-B12 Tonic

In 110 ml and 450 ml bottles

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The Antiseptic

A Monthly Journal of Medicine and Surgery
Published on the 6th of every month
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Past Editor late Dr. U. KRISHNA RAU

Editor: Dr. U. VASUDEVA RAU, M.B., B.S.
Editorial & Publishing Office: 323-24, Thambu Chetty St., Madras-600001
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Vol. 72 | OCTOBER, 1975 | No. 10

Original Articles

DIAGNOSTIC FEASIBILITY OF PLEURAL EFFUSION BY PUNCH BIOPSY OF THE PLEURA*

S. K. JAIN, M.D., D.T.C.D., F.C.C.P.,
Head, Dept. of Tuberculosis and Chest Diseases,
M. L. N. Medical College, Allahabad (U.P.)
AND
VIRENDRA GUPTA, M.D.,

FOR purposes of pleural biopsy De-Francis first used in 1955 the the VIM Silvermans needle. Since then several other types of needles have been used as for instance, the Abram punch biopsy needle (1958), Cope needle (1958), Carpenter needle (1961) and Ballestero needle (1971). Abram punch biopsy needle (Harefield) has now come to be the most acceptable because it has proved to be very successful in obtaining a sizeable piece of the regional tissue. Being one with a blunt end the risk of damage to lung tissue is minimal and it also allows aspiration and biopsy at one prick.

The results obtained in pleural effusion are very variable with different needles and different workers, ranging from 6·5% to 68%, (Gillian 1962; 6·5%; Rajkendawar 1963, 26·1%; Pragani *et al* 1962, 44·4% and Redermecker *et al* 1965, 62·5%). The results of punch biopsy are reported to have been better. In the present study, the Abrams-punch-biopsy needle was used for tubercular pleural effusion patients to ascertain diagnostic feasibility.

Material and methods.—The present study includes 22 patients with tubercular pleural effusion admitted to the

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*Specially contributed to the 'ANTISEPTIC'.

Medical ward of the S. R. N. Hospital and Govt. T. B. Hospitals, at Allahabad. The diagnosis of tubercular pleural effusion was based on clinical examination, fluroscopy and/or a skiagram of the chest and thoracentesis. Detailed informative history was obtained from every patient and a thorough clinical examination was made. The following criteria were adopted for the diagnosis of tuberculous pleural effusion.

Table I

Diagnostic criteria adopted for tuberculous pleural effusion

S. No.	Diagnostic criteria		No. of patients and percentage
1.	History of previous illness of tuberculosis	...	2 or 9·2
2.	History of contact in the family	...	4 or 18·4
3.	Symptomatology	...	22 or 100
4.	Physical signs of cavitation, fibrosis and infiltration	...	10 or 46
5.	Radiological evidence of tubercular lesion.	...	6 or 27·6
6.	Sputum positive for *A. F. B.*	...	3 or 13·8
7.	Colour of pleural fluid	...	20 or 92
8.	Biochemical examination of pleural fluid	...	17 or 78·2
9.	A. F. B. detected in pleural fluid	...	5 or 23

Routine examination of the blood, urine, stools, and screening of the chest and/or skiagram of the chest and sputum examination for *A.F.B.* or/and other pyogenic organism was made in every case. On the basis of the chest skiagram the cases were divided into the following groups:—

Group A :—Patients with pleural effusion *without* evident lung lesion – 13.

Group B :—Patients with pleural effusion *with* lung lesion – 6.

Group C :—Patients with hydropneumothorax – 3.

Patients with pleural effusion were radiologically classified into subgroups according to the extent of pleural effusion :– (*i*) Minimal pleural effusion — 3, who had small opacity obscuring the costophrenic angle only with the base at the diaphragm and apex laterally, (*ii*) Moderate pleural effusion–11, in whom the opacity extended upto the 4th rib anteriorly, (*iii*) Massive pleural effusion – 5, in whom the opacity reached upto the anterior end of the second rib or even above.

Special investigations included pleural fluid examination ; gross and microscopic, biochemical examination, fluid examination for detecting *A.F.B.* by smear and cultures was done in most cases.

Pleural biopsy was done in all cases using the Abram-punch biopsy needle. The technique of using the punch is reproduced here as described by Abram in 1958.

Technique:—"The chest was infiltrated with a local anæsthetic in the usual way. A tiny incision was made in the skin and the punch was introduced with the notch closed in which state it was airtight. The back hexagonal grip is twisted anticlockwise to open the notch. The notch was then directed along the intercostal-space by means of the indicator knob on the front hexagonal grip. The punch was slowly withdrawn and sideways pressure in the direction of the notch was maintained until it was felt to engage in chest wall. The punch is then held firmly against the chest-wall. The back hexagonal grip was twisted sharply clockwise and the punch withdrawn. Finger pressure for two to three minutes stopped bleeding. The biopsy specimen is found either in the hollow point or inside cutting cylinder. The tissue thus obtained was fixed in B.M.F. (10% formaline) for 24 hours. After processing tissue sections were made and stained with hæmotoxylin and Eosin the slides were examined under microscope".

The criteria adopted for a histological diagnosis were:—(*a*) In tubercular inflammation, the section shows a collection of epitheloid cells with or without caseation surrounded by lymphocytes and giant cells of Langhamtype, (*b*) If due to tuberculous inflammation, there is a collection of epitheloid cells surrounded by lymphocytes and caseation without the presence of giant cells of Langhams type included in the tuberculous group.

Table II

Showing the age incidence of the patients

Age-groups	Numbers of patients and percentage
10—20 years	10 or 46
21—30	5 or 23
31—40	4 or 18·4
41—50	2 or 9·2
Above 50 years	1 or 4·6

Chronic nonspecific inflammation:—The section shows the presence of chronic inflammatory cells *e. g.* lymphocytes, plasma cells and eosinopils with evidence of fibrosis.

The youngest patient was 12 years of age and the oldest patient was 58 years. In our series 18 were males (82·8%) and 4 were females (18·4%) *i. e.* in the ratio of 3. 5 : 1.

A past history of tuberculosis was elicited from 3 patients. History of antitubercular treatment before admission was had in 10. The period of treatment varied from 1 month to 3 years. In 4 there was a history of irregular and inadequate treatment with anti-tubercular drugs. Family history of tuberculosis was obtained in 4 cases.

One patient with clinically diagnosed tubercular pleural effusion turned out to be of malignant ætiology. The majority of patients presented a chronic nonspecific-picture.

Table III

Incidence of symptoms

Sl. No.	Symptoms	No. of patients and percentage
1	Cough	20 or 92
2	Fever	18 or 82·8
3	Pain in the chest	17 or 78·2
4	Breathlessness	15 or 69
5	Loss of appetite	20 or 92
6	Loss of weight and weakness	16 or 73·6

Table IV

Physical signs

Sl. No.	Signs	No. of patients and percentage
1.	Anaemia	16 or 73·6
2.	Clubbing	8 or 36·8
3.	Cyanosis	3 or 13·8
4.	Effusion	
	— Right sided	14 or 64·4
	— Left sided	8 or 36·8
5.	Associated signs	
	Cavity	3 or 13·8
	Adventitious sound	7 or 33·2
	Succusion splash	1 or 4·6

Table V

Pleural fluid examination

Pleural fluid examination		No. of patients and percentage
Sp. gravity —		
Above 1014	...	22 or 100
Below 1014	...	— —
Gross —		
Straw	—	18 or 82·8
Haemorrhagic	...	2 or 9·2
Pus	...	2 or 9·2
Lymphocyte —		
More than 100 cells per cumm		10 or 46
More than 200 cells per cumm		4 or 18·4
Smear examination —		
A.F.B. Positive	—	5 or 23
Culture examination —		
A.F.B. Positive	—	4 or 18·4

Table VI

Results of pleural biopsy

Histological diagnosis	No. of patients and percentage
Tubercular	5 or 23
Malignant	1 or 4·6
Chronic nonspecific	13 or 59·8
Normal	1 or 4·6
Inadequate	2 or 9·2

Discussion.—Pleural effusion is a very common condition, and yet it is difficult to establish the aetiological diagnosis in many cases. Pleural biopsy is very important in the diagnosis of the causes of pleural effusion. Open pleural biopsy gives good results but is abandoned because of the complexity of the procedure and the want of a skilled surgeon to perform the biopsy. Nowadays closed needle biopsy of the pleura is a safe, simple and acceptable procedure and has proved a useful aid in the diagnosis of pleural diseases. In the present series we got only 23% positive results in clinically diagnosed tuberculous group which is much less than these reported or other workers :—[Mestitz 1958 : 64·2%; Sison and Weiss 1962 : 60·4%); Agrawal *et al* 1970 : 39% Tandon *et al* 1975 : 42 9%].

Variations in the results of other workers may be due to the failure in obtaining enough tissue as the pleura is not thickened during the early stages. *Secondly*, most of our patients had received antitubercular treatment prior to admission which could have modified the histological picture to a chronic nonspecific inflammation and *thirdly* a patchy distribution of the tubercles on the surface of the pleura.

Chronic nonspecific changes were the commonest histological finding in the present series which I found in 59·8% of the patients. All of them had a raised E. S. R. and an exudative pleural effusion. Four of them showed acid fast bacilli in the pleural fluid and a few others, (18·4%) had radiologically demonstrable antitubercular therapy. From this discussion it is clear that a significant number of patients who were proved tubercular by other means had chronic nonspecific changes in their pleural histology. We feel that tuberculosis could be the diagnosis in most cases having a chronic nonspecific inflammatory histology. The result could be the after-effect of antitubercular chemotherapy prior to admission, the incidence of which in the present study was quite significant.

Summary.—22 clinically diagnosed cases of tubercular pleural effusion were studied in detail. The literature pertaining to the study has been reviewed. Needle biopsy of pleura was found to be a safe and simple procedure. Positive diagnostic results were obtained only in 23% cases. Variability in biopsy results in literature has been explained due to failure in obtaining enough tissue, as pleura is not thickened in early stages of the disease and secondly due to modification of histology by institution of antitubercular therapy before admission. About 59·8% cases who had chronic non-specific change in pleural histology, were found to be tubercular by other means. Importance of tubercular etiology in cases of chronic non-specific change has been emphasized.

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INTRAVENOUS SALBUTAMOL IN MANAGEMENT OF STATUS ASTHMATICUS

Though intravenous aminophylinine is widely used as broncho-dilator in the management of severe attacks of asthma recent reports have drawn attention to its potential cardiotoxicity. The specific

B2-adrenergic agonist salbutamol has been shown to be effective and safe by both inhalation and the oral route. We report here an initial assessment of its use intravenously in severe acute asthma.

Patients and Methods :—The observations were made on 11 patients who had been admitted to hospital with a severe acute exacerbation of asthma. Patients who had received an intravenous bronchodilator within the preceding three hours were excluded, but not those who had been treated with oral or inhaled bronchodilators or corticosteroids.

Baseline observations of PEF (by Wright's peak flow meter) and pulse-rate were made at five-minute intervals for 10 minutes before injection of intravenous salbutamol. A dose of 100·300 pg was used. The injection was given over a period of up to one minute. Observations of PEF and pulse rate were then continued at five and ten minute intervals for 40 minutes.

In five patients the effect of an additional dose of intravenous salbutamol was observed. The second dose was given at least 20 minutes after the first dose and only to patients to whom PEF and pulse rate had remained constant within the preceding 10 minutes. Side effects were monitored by careful observations of the patient for a period of one hour. Any untoward symptoms experienced by the patients were noted.

The assessment of a bronchodilator in severally ill asthmatic patients is not easy and we decided not to attempt any form of blind trial but only to document the result of therapy under conditions in which little spontaneous variation would be expected. Ideally, treatment given in the period preceding the intravenous salbutamol should have been strictly controlled but this would have posed great problems and we felt that to assess efficacy of salbutamol against this mixed background, excluding only recently administered intravenous aminophyline would be useful. Conticosteroids were given when indicated but the responses we observed occurred earlier than could be attributed to steroid therapy. Intravenous salbutamol produces a good bronchodilator response. There was a trend towards not only a better response in the less severely ill patients but also an earlier response. In this group the optimum response was usually apparent at 10 minutes. There was on average a 44% increase in PEF and a significant improvement persisted for up to 40 minutes when the trial was ended in the six patients in whom observations were continued for that period. Side effects were not severe.

Though the dose response studies were limited they suggest that an optimal effect may be achieved with an intravenous dose of salbutamol 300 μg. Any further increase in dosage has no therapeutic advantage and may increase the incidence of side effects. For an initial therapeutic intravenous dose of salbutamol we suggest 100 μg. which may be followed 15 minutes later by 300 μg. if there is an inadequate response.

Despite the limitations of design this trial has shown that intravenous salbutamol in a dose of 100·300 ug is an effective and apparently safe bronchodilator with few side effects in the acutely ill patient admitted to hospital with severe asthma. Controlled trials against the established agent aminophylline seem to be justified.—(Fitchett David, H, *et al. Brit. Med. Jour.* 1975, 1, 53-55).

THE PLACE OF CRANIOTOMY IN INDIAN OBSTETRIC PRACTICE*

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THE term "Craniotomy" as used in Obstetrics means any operation that effects a decrease in the size of the fœtal head for the purpose of facilitating its delivery.[1] British and American authors consider that this operation of great antiquity has no place in "modern" obstetrics[1, 2], and of course, widespread prenatal care, more astute management of pelvic contraction, antibiotics and improvements in the techniques of cæsarean section have rendered craniotomy an exceedingly rare operation in modern obstetrics as practised in the developed countries. But the situation is totally different in the developing countries. Craniotomy in India is a safer operation as compared to cæsarean section in patients who are admitted after prolonged labour with gross intra-partum sepsis.

Material and methods.—Between 1-10-1969 and 30-9-1974, a five year period 9620 deliveries were conducted in Tirunelveli Medical College Hospital, Tirunelveli. Craniotomy was performed in 168 cases, (an incidence of 1·75% of all deliveries, compared to 0·98% in Government Erskine Hospital, Madurai).[3] In 151 cases (90%), the fore-coming head was perforated and in the remaining 17 cases (10%), the aftercoming head was perforated. This finding is consistent with the observations of Jayalakshmi.[3]

RESULTS.—Over 46% of the patients were young primigravidæ. The age and parity are given in Tables I and II respectively (*vide infra*). The indications for craniotomy are given in Table III. The commonest indication was prolonged and/or obstructed labour with gross intrapartum sepsis (88·7%). The fœtus was dead in 96 patients, moribund in 43 and hydrocephalic in 19. The birth-weights are setforth in Table IV. Table V shows the maternal complications. While certain risks were inevitable in the use of the perforator, a large number of complications were incidental to prolonged labour and the infection of the birth-canal. We lost eight mothers (4·76%) and the causes of maternal deaths are set forth in Table VI. All these patients were admitted with gross intrapartum sepsis, dehydration, acidosis, and evidence of impending rupture of the uterus.

Discussion.—According to Eastman and Hellman[1] "there is rarely an indication for craniotomy, but in the face of uterine inertia in a patient with a contracted pelvis and a dead fœtus, the mother may thereby be spared a cæsarean section." Moir[3] states that he is generally opposed to craniotomy even if the fœtus is already dead. He has also stated that cæsarean section has, undoubtedly, superseded the "dangerous and repugnant" operation of craniotomy. Obstetric practice in India is certainly not comparable to what it is in developed countries. In India craniotomy is fairly a common operative procedure. It is important to note that the incidence of craniotomy was so high as 0·98% in Madurai[2] and 1·75% in the present series.

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*Specially contributed to the 'ANTISEPTIC'.

TABLE I

Showing the age incidence

Age in years	No. of patients
Upto 19	24
20 — 25 ...	71
26 — 30 ...	39
31 — 35	25
36 — 40 ...	8
Over 40 ...	1
Total	168

TABLE II

Showing the parity of the 168 patients

Parity	Primi	I	II	III	IV	V	VI	VII	VIII	IX
No. of patients	78	14	22	13	17	9	9	4	1	1

TABLE III

Showing the indications for craniotomy

Indications for craniotomy		No. of Patients
I. Obstructed Labour:		113 or 67·3%
(*i*) C.P.D.	20	—
(*ii*) R.O.P.	11	—
(*iii*) Compound presentations	6	—
(*iv*) Brow presentation	5	—
(*v*) Glabellar presentation	2	—
(*vi*) Posterior parinetal presentation	1	—
(*vii*) After-coming Head Difficulty	9	—
(*viii*) Cause unknown	58	—
II. Prolonged labour with gross I.P. sepsis		36 or 21·4%
III. Hydrocephalus:		19 or 11·3%
Fore-coming head	11	—
After-coming head	8	—

Very often Indian obstetricians have to deal with patients who are admitted with gross intra-partum sepsis after prolonged and obstructed labour. When the fœtus is already dead, craniotomy is unanimously preferred by all Indian obstetricians, unless there are definite contra-indications such as incomplete dilatation of the cervix, totally contracted pelvis, and a suspicion of rupture of the uterus. However, the management becomes a dilemma when the fœtal heart is still audible and the condition of the fœtus is moribund. Is cæsarean section justified for a moribund fœtus in a woman with gross sepsis of the birth canal? If not, are we justified in doing craniotomy on a living fœtus, however moribund it may be? In such a case, under the conditions obtaining in most of our hospitals in India, the risks of cæsarean section are decidedly higher. Such women are unlikely to come for regular antenatal check-up during subsequent post-cæsarean pregnancies and are likely to have unsupervised home deliveries with an almost certain risk of the rupture of the scarred uterus. So, I consider that it would be unfair to risk the life and the future obstetric career of the mother for the sake of a moribund fœtus with a meagre chances of survival in the neonatal period.

TABLE IV

Birth-weight of the fœtuses

Birth-weight	No. of fœtuses
Upto 2·0 kg.	16
2·1—2·5 kg.	31
2·6—2.9 kg.	16
3 0—3·4 kg.	64
3·5—3·9	34
4·0 kg and over	7

TABLE V

Showing the maternal complications met with

Complications	No. of Patients
I. Complications related to craniotomy:	
(*i*) Failed craniotomy (LSCS done)	1
(*ii*) Suspected rupture of uterus (Negative laparotomy)	4
(*iii*) Rupture of uterus	5
(*iv*) Cervical tear	3
(*v*) Vaginal lacerations	6
(*vi*) Complete perineal tear	2
II. Complications incidental to prolonged labour and infection:	
(*i*) Gross sepsis of birth canal	95
(*ii*) Threatened rupture of uterus	45
(*iii*) Maternal distress	6
(*iv*) Atonic P. P. H.	15
(*v*) Vesico vaginal fistula	4
(*vi*) Stress incontinence	1
(*vii*) Obstetric palsy	4
III. Miscellaneous complications:	
(*a*) Chronic *cor* pulmonale	1
(*b*) Previous C. S.	1
(*c*) Cord-prolapse	11
(*d*) Shoulder dystocia	6

The gross mortality and morbidity are certainly higher, but it is not justifiable to attribute the risks incidental to prolonged labour and sepsis to craniotomy[4]. The prognosis for the mother is largely determined by the duration of labour and the severity of intra-partum sepsis. Craniotomy by itself is not a dangerous operation provided it is done with due care.

TABLE VI

Showing the causes of maternal deaths

Causes	No. of Mothers
Septic shock	4
Sepsis and hæmorrhage	2
Cardiac arrest	2

I am convinced that Braun's cranioclast is a very useful instrument in some difficult situations, though text-books describe this instrument as of "historical interest" only. This instrument consists of two blades, one of which is pushed in through the opening in the skull and the other is applied to the outside, preferably over the face. The two blades are then forcibly brought together by a strong screw at the end of the handles. I personally prefer to use a pair of sharp pointed 8" scissors instead of the usual Simpson's craniotomy forceps.

Conclusions.—Though craniotomy is now considered to have no place in "modern" obstetrics, it still remains an indispensable procedure in Indian Obstetric practice. Craniotomy is a safer operation compared to cæsarean section in patients with sepsis of the birth-canal.

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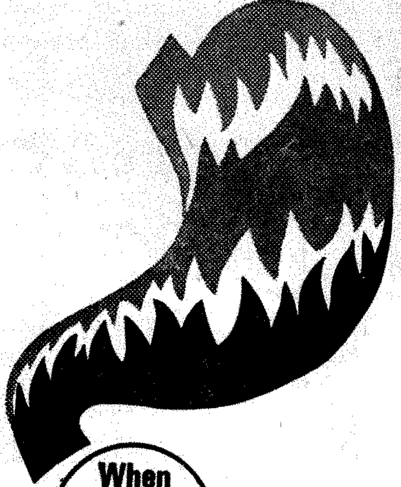

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DRUG TRIAL OF '*HISTRYL SPANSULE*' CAPSULES IN ALLERGIC RHINITIS*

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ALLERGIC rhinitis or nasal allergy has, in the past, been a source of considerable confusion to the otorhinolaryngologists, not only due to a difficulty in clinically differentiating it from vasomotor rhinitis, but also due to the problems of curing it or arresting its symptoms. It is a fact that antihistaminic therapy does aid a majority of the patients suffering from allergic rhinitis, although they do so in different degrees of response to different antihistaminic preparations. Today the market is flooded with a wide variety of these drugs and it is often difficult to find the most suitable one A good antihistaminic must be effective in controlling the symptoms without causing serious side effects Often a patient gets a worsening of this symptoms in the morning since it is difficult to control the symptoms of allergic rhinitis through the night. An increase in the night dose often results in dizziness, drowsiness or unwanted excessive sedation. Hence, increasing the night dose is not the answer.

The application of modern pharmacological helps to extend the duration of action of a given drug when administered in a '*Spansule*' form, and has also a more or less timed release of the drug, preventing sharp peaks in the blood-level. Hence, it is possible to reduce the side-effects of a drug and at the same time increasing its efficacy.

'*Histryl Spansule*'★ is a powerful and short-acting antihistaminic, prepared to conform the above principle, has been used in the present investigation to assess its efficacy in patients clinically diagnosed to be suffering from allergic rhinitis.

Pharmacology:—'*Histryl Spansules*' contain the pharmacological compound Diphenylpyraline (1-methyl-piperidyl-4-benzhydryl ether). This drug is a potent antihistaminic, with a low incidence (12%) of side-effects, which are of a minor nature. It was proved by Swartz (1954) in a clinical trial conducted by him on 100 patients suffering from hay fever.

Each '*Histryl Spansule*' contains several tiny pellets of the drug (Diphenylpyraline) in varying thicknesses of their coatings. A part of the drug gets released as soon as the capsule dissolves, the rest is released gradually by a break-down of the

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★ Histryl Spansule is manufactured and marketed by Smith Kline and French.

*Specially contributed to the 'ANTISEPTIC'.

pellets at different times, so as to maintain an even blood level concentration for about twelve hours.

Material and methods.—Fifty patients with allergic rhinitis as diagnosed clinically from the classical symptoms of nasal stuffiness, rhinorrhœa, sneezing, itching and headache, etc. and signs of pallor of the nasal mucosa, nasal discharge, hypertrophy of the inferior and middle turbinates, polypoidal change in the mucosa, etc. and aided by relevant points in the history given by the patient like associated urticarial rashes, bronchial asthma, etc. and his family history of allergic diathesis were selected for this study. Each of the 50 patients was given '*Histryl Spansules*' in a twice-daily-dose, (*i.e.*, a daily dose of 10 mg. of Diphenylpyraline, as each 'Spansule' had 5 mg. The patients were advised to take the 'spansules' in the standard dose of one capsule night and morning for at least a week. Every patient was followed-up for a week and his daily progress during a week was recorded. Improvement or deterioration in each symptom along with leading questions on any side-effects and replies along with the clinical findings, also were recorded. The treatment of these patients was continued for periods varying from one to six weeks.

Observations.—Fifty patients were selected from the E. N. T. Out-patient Department of the Irwin Hospital, and a detailed E.N.T. examination was conducted on them.

TABLE I

Showing the age incidence of 50 the patients

Age in years	No. of Patients
0 — 10	—
11 — 20	19
21 — 30	23
31 — 40	5
41 — 50	2
51 — 60	1
Total	50

TABLE II

Showing the main symptoms observed in or complained of by the patients

Chief Symptoms	No. of patients
1. Nasal discharge	45
2. Nasal stuffiness	44
3. Lachrymation	19
4. Sneezing/Itching	44
5, Headache	32
6. Fever	3

It will be seen that most of the patients (84%) were in the 11 to 30 years' age-group. A few of the cases were referred to the E. N. T. Department from the Medical Out Patient Departments for diagnosis of nasobronchial allergy, they were already on bronchodilator therapy. The youngest was 13 years old and the oldest man 52 years old.

The sex distribution in the present series was 38 males and 12 females with a predominance of males, therefore with a male, female ratio of more than 3 : 1.

The commonest symptoms noted were:—(*i*) nasal discharge, (*ii*) nasal stuffiness and (*iii*) sneezing and/or itching in the nose. These symptoms were encountered in almost 90% of the patients. Headache, generally frontal and of a dull nature usually was the other common symptom seen in 64% of the patients. Only 6% complained of fever but none was ever found in a febrile state at the time of check-up.

Results—37 of the 50 patients. (74%) showed very satisfactory or good response to '*Histryl*'. Another six showed moderate response; in all,'*Histryl*' was effective in 86% of the patients. Six showed no improvement at all, out of whom 3 had cortisone locally in the nose and/or orally and were deriving benefit only with the use of cortisone preparations. Decongestants in the form of ephedrine, pseudoephedrine and other antihistaminics had been tried by these patients in the past, without benefit, However, in the other three patients with nasal allergy (who had not had cortisone) '*Histryl*' was ineffective.

One patient discontinued treatment after taking five 'Histryl Spansules' as she felt excessively drowsy and sleepy; she also had marked dryness of the mouth and throat.

In the majority (90% approx.) of the patients improvement in the symptoms was noted within 48 hours and in most of them the effect lasted for about 12 hours so that they were satisfied with a dosage of two capsules per day.

Side-effects :—No major side effects were noted in the entire series of 50 patients. As reported above, one patient had marked dryness of the mouth and throat and also felt sleepy. A mild degree of drowsiness and dryness of the mouth was reported by 5 others.

Discussion and conclusions :—From the present investigation it will be seen :—

(*i*) Antihistaminic therapy is effective in controlling the symptoms of nasal allergy.

(*ii*) '*Histryl Spansules*' are an effective and potent antihistaminic with very limited side-effects.

Summary—(*i*) 50 patients suffering from allergic rhinitis were treated with 'Histryl Spansules' in a dose of 1 capsule twice a day.

(*ii*) It was found to be potent and a relatively safe antihistaminic with a prolonged duration of its effects.

Acknowledgements.—Our grateful thanks are due to the other members of the staff of the E.N.T. Department of the M.A.M. College and Associated Irwin & G.B. Pant Hospitals, New Delhi, for their willing co-operation and useful help in conducting this investigation.

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ORAL AND INTRAVENOUS PROSTAGLANDIN E-2 IN INDUCTION OF LABOUR

During the past three years many clinical papers have appeared on the use of prostaglandins in labour induction, but it is only recently that these compounds have become available for assessment within the normal routine of a busy provincial maternity hospital such as ours. This paper report our findings following the use of both orally and intravenously administered prostaglandin E-2 in the induction of labour. The trial had two objectives first to establish the relative roles of both routes of administration when labour was being induced before term. Our results confirm the view of Craft that oral prostaglandin E-2 is an effective oxytocic agent in patients with a favourable cervix, our series having a success rate of 93·5% with a mean induction delivery interval of 7 hours 58 minutes. The convenience of the oral route was appreciated both by the patients who were unrestricted until active labour commenced and also by the attendant medical and nursing staff who were pleased to be relieved of the time consuming duty of setting up and monitoring intravenous infusions. It was interesting to note that even in a group of patients with an unfavourable cervix a success rate of 84·6% was achieved using oral prostaglandin E-2 indicating that if one is prepared to accept a longer induction delivery interval (in this series a mean of 13 hours 48 minutes) the oral route may be considered to be a satisfactory alternative to intravenous therapy. However in a similar group of patients who were also considered unfavourable at the time of induction the intravenous route gave a slightly higher success rate (87·1%) but with a considerably shorter induction delivery interval (10 hours 15 minutes). This shorter interval is considered to be an important factor since the majority of these deliveries can be undertaken during daylight hours which is a considerable advantage in the efficient running of a labour suite. In patients with a favourable cervix there was no significant difference in the success rate or mean induction delivery interval between treatment groups. Both routes offered a satisfactory alternative to intravenous oxytocin, which, before this study was the routine oxytocic used in this hospital.—(A.F. Marzouk, MB. N. GH. in *The British Journal, of Clinical Practice,* March 1975).

AN EVALUATION OF THE RADIOLOGICAL SIGNS OF FOETAL DEATH

Consequent on the demonstration of the potential hazards of X-ray diagnosis in the pregnant mother and the development of isotopic and ultrasonic scanning techniques, there was a fall off in the number of obstetric referrals to X-ray departments. In recent times, however, as the values and limitations of ultrasound have become better defined the use of radiology is increasing.

Radiological investigation is unwarranted if the findings are unlikely to influence further management. This article will review the signs of fœtal death.

The radiological signs of fœtal death are in essence a study of the processes of maceration and the number of signs present depends to a large extent on the degree of maceration. A radiological consultation in cases of suspected intra-uterine death must be aimed at arriving at a definite conclusion as to the state of the fœtus. Vague reports are of no assistance to an obstetrician faced with so important, a problem, and only serve to undermine the confidence of the clinician in the value of X-ray investigation and interpretation.—(M. I. Shaff, in *S. A. Med. Jour.* 26-4-1975).

URBAN TUBERCULOSIS CONTROL PROGRAMME*

(A STUDY)

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MAGNITUDE OF THE PROBLEM :—The problem of Tuberculosis is present from time immemorial. Evidence of Tuberculosis in bone-lesions was found in Neolith skeletons, and in the mummies of the Egyptian Pharaohs. It has also been vividly described as 'Rogharaaj, *i.e.*, King of Diseases in 'Rigveda' so long ago as 2500 B.C.

At present in India, Tuberculosis in its varied forms ranks as the second major cause of death, the first being gastro-intestinal tract disorders. There are about 7 to 8 million T. B. patients in our country of whom nearly 2 millions are infectious *i.e.* sputum positive cases, and each person in turn infects atleast 4 others per year. As regards mortality, 1 person dies of tuberculosis every minute, and in turn 5 lakh of persons every year. 40,000 children die every year of progressive primary complex and its complications. These data give us an indication of the magnitude of the problem and the need for a concerted programme to control the disease and eradicate it altogether if feasible.

The National Sample Survey of India carried out from 1955 to 1958 showed that the prevalence of Tuberculosis in urban and rural areas does not vary significantly and also the incidence of the disease is the same, in the older and younger age groups. Thus the role of N.T.C.P. (National Tuberculosis Control Programme) is directed towards the rural and urban areas and has acquired the status, similar to the National Health Services.

Objectives of the tuberculosis control programme are :—(1) To ascertain the magnitude of the problem by various methods for case-finding and specific surveys.

(2) Prevention of the spread of the disease by increasing the resistance to infection by (*a*) raising the general standard of living among the general population; (*b*) suitable health education, emphasis being laid on both personal and social health factors, like the use of airy, well ventilated, clean dwelling places; avoidance of contacts; proper disposal of sputa and other infective material, proper notification of the illness, need for boiling or pasteurization of milk, *etc.* (*c*) effective chemoprophyaxis (*d*) mass B.C.G. vaccination.

(3) Effective treatment of sputum-positive patients and effect speedy conversion to the sputum negative state.

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*Specially contributed to the 'ANTISEPTIC'.

How urban areas differ from rural ones with regard to planning and resources :—(1) In urban areas people are more health-conscious than those in the rural. Hence the percentage of the population who seek medical advice and help of their own accord is high.

(2) Since the majority of the urban people are either office-goers or factory workers with regulated activities, their free time to seek medical advice and aid is limited.

(3) Several institutions giving medical aid like Govt. or private hospitals and dispensaries. Institutions run by corporations and voluntary bodies are present in urban areas.

(4) Services of numerous private medical practitioners are available in all urban areas.

Thus we see, in planning the Control Programme in an Urban Area the output or yield compares very favourably with the in-put or effort. The resources are there and what is needed is the efficient co-ordination of these and effective supervision of the various centres.

District tuberculosis programme :—While formulating the National Tuberculosis Programme of India, the District was taken as the unit and the District Tuberculosis Centre was entrusted with supervising and implementation of the recommendations made by National Tuberculosis Programme through a co-ordinated work of various sub-centres which were named as (1) Purely Referal Centres (2) Purely Diagnostic Centres. (3) Purely Treatment Centres and (4) Diagnostic-*cum*-Treatment Centres.

The District Tuberculosis Centre will be in charge of a District Tuberculosis Officer assisted by suitable trained staff in the fields of Radiology, Microscopy, B. C. G., and Statistical fields.

Working of D T.C. :—As soon as a person enters the District Tuberculosis Centre for the first time, he is clinically examined by a Medical Officer and the necessary investigations like the Mantoux Test, skiagrams and sputum examination for *AFB* are all made and he is sent with advise to report again on the third day after giving some palliative drug therapy. On the third day the results of the investigations will be ready for scrutiny All the negative cases are sent with appropriate treatment and advice. For all the positive cases the Medical Officer fills up the N.T.P.—M.F. (Model Form) 48 with all the particulars and sends it to Statistical Department to get the Index number. The statistician fills up the following cards : *namely*, (1) Case Index Card, (2) Cross Index Card, (3) Identification Card, (4) Treatment Card and (5) Contact Record and submits the data for the National and Inter-national purposes. As soon as the Index number is obtained proper treatment for a specified period is started.

The co-ordinated work of various sub-centres and D.T.C. is diagramatically represented below :—

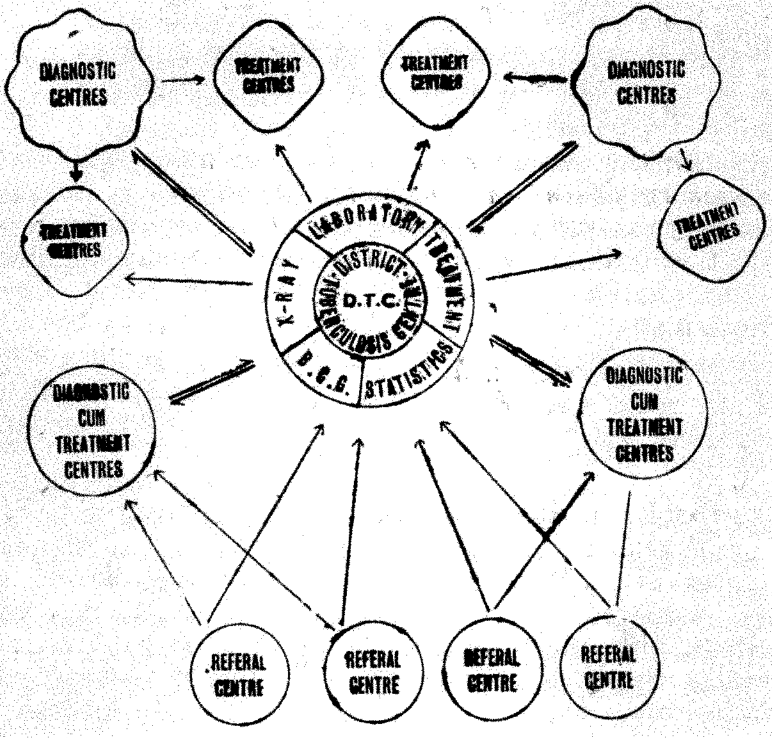


DIAGRAM I

Ways of minimising the defaulter-rate :—The following recommendations are implemented to minimise the defaulter-rate and to obtain the maximum success for the programme.

(1) *Effective motivation and health advice* :—Social workers and Health Visitors are specially trained and posted to different centres and specific areas are allotted to each for frequent Home Visits to keep up the *morale* of the patients. Their duty is to contact the people and explain to them the value of better, social and personal hygiene, the nature of the illness and the necessity of regular and continued treatment and emphasise that tuberculosis Is *Not Hereditary*, It can be prevented and positive cases can be cured if treated adequately. Motivation though the main job of Health Visitors should be done by all people right from the Medical Officer down to last grade servant of the Clinic.

(2) *Number and situation of the centres* :—Establishment of many treatment and diagnostic centres at various places and allotting particular areas to each of them; by this patients can be

treated at the Centres nearest to their residence or workspot. They need not wait unnecessarily for the number of patients will be limited they could be attended-quickly.

(3) *Working time of these centres* :—Working time of these centres is adjusted to coincide with the free time of the majority of the patients in that area enabling most of them to attend the clinic regularly.

(4) *Arrangements for the regular, uninterrupted free supply of the necessary drugs in adequate quantity* :—This helps in (*a*) inducing an urge in the patients to take treatment regularly (*b*) definitely reducing if not completely preventing the emergence of resistent strains and (*c*) bringing about an overall reduction in the defaulter-rate.

(5) *Cordial relationship between the doctors and the Patients* : —This is most important that will help in obtaining the maximum success for the programme and a minimum defaulter rate.

Drawbacks or loopholes in the functioning of N T.P —(1) *Audit difficulties* :—In the execution of a National Programme like N. T. P. with a co-ordinated approach of various centres scattered over the country, managed by different authorities, the management of establishmental expenditure and regular supply of drugs, etc. are bound to be very difficult and audit objections are liable to lower the interest of the people engaged in this task.

(2) Interruptions in the regular supply of the needed drugs in adequate quantities considerably halt the progress of D.T.P.

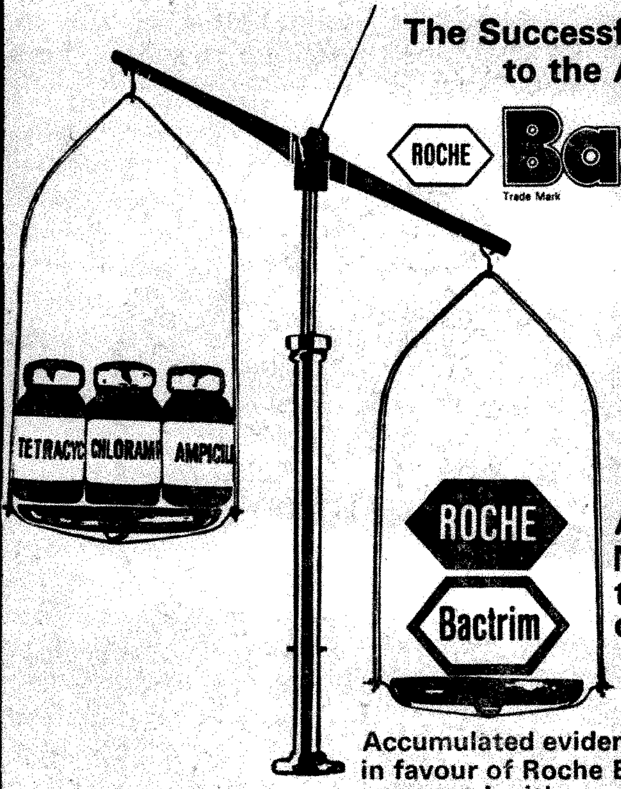
(3) Administrative difficulties.

(4) Lack of sufficient trained personnel to work in various fields of D.T P like motivation, diagnosis, treatment, B.C.G., statistical area, hampers the rate of success of the programme.

(5) Though tuberculosis is a notifiable disease, it has not been implemented effectively.

(6) *The role of the private medical practitioners* :—Ways and means yet to be devised for enlisting the effective participation of all have private medical practioners and institutions in this programme.

(7) Floating population, like business representatives, tourists and pilgrims are not trapped in the programme. Since these people do not stay in one place, ways have to be devised for the prevention and treatment of tuberculosis cases among this floating population, so as to get the maximum success for the programme.



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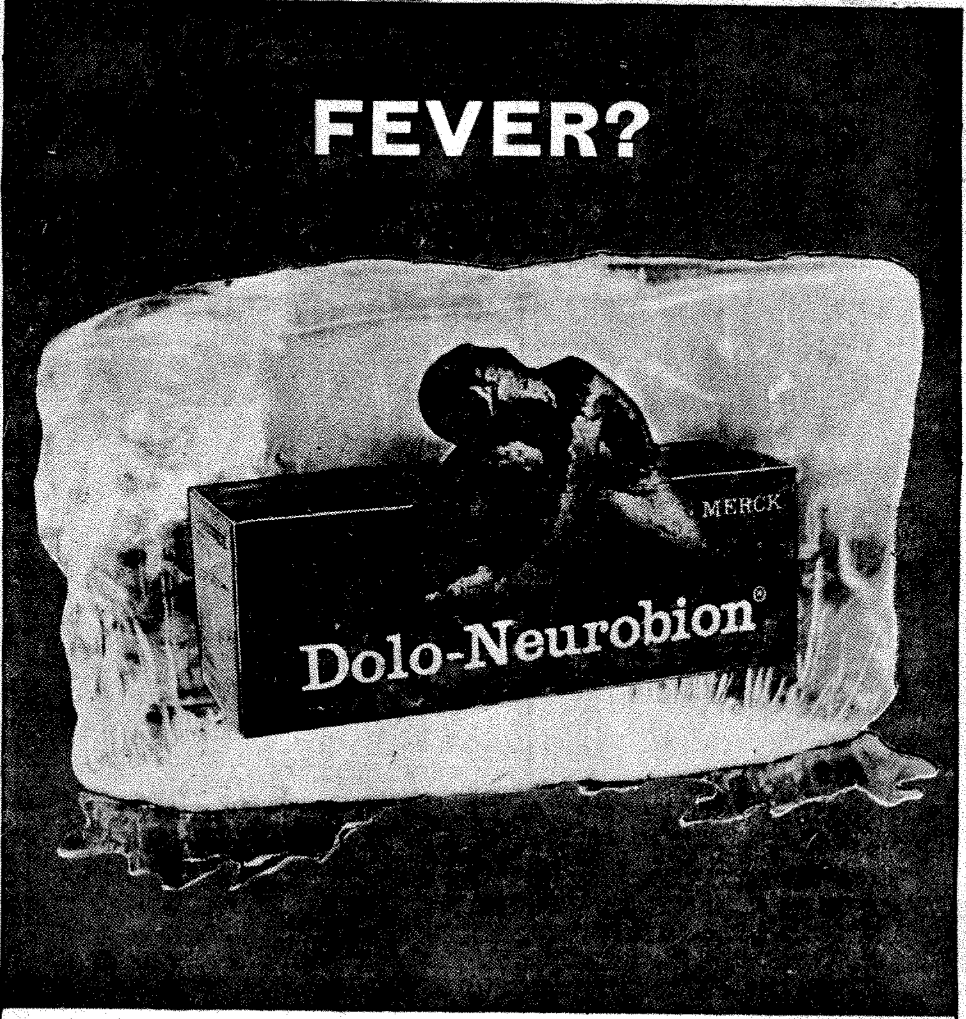

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CURRENT STATUS OF INSULIN IN THE TREATMENT OF DIABETES MELLITUS*

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THE discovery of insulin in 1922 by Banting and Best completely revolutionized the management of diabetes. The change is more impressive for subjects below 20 years of age, where the gap between diagnosis and death has been widened from below 3 years to nearly 30.

By definition, the syndrome of diabetes is attributed to absolute or relative insulin deficiency and it is therefore, prudent to administer exogenous insulin. It has been estimated that the normal pancreas secretes between 30 to 50 units of insulin per day and since insulin is a double chain polypetide with a molecular weight of 35000 it is always administered parenterally depending on the requirements of the particular patient, but never orally since it is digested in the stomach.

Insulin has not yet been synthesized. Commercial insulin is derived from pancreatic sources of both cattle and pig; so treatment with exogenous insulin over a few weeks induces variable amounts of antibody formation in the majority of patients. Further, endogenous secretion of insulin from β-cells is finely regulated from minute to minute by a number of neural, hormonal (secretine, glucagon, catecholamines, corticotrophin, etc.), substrate (glucose, aminoacids) and feed-back mechanisms. The administration of exogenous insulin cannot emulate this regulatory mechanism.

The various types of insulins available, their length of action, peak action, etc. will be found in Table I, *overleaf*.

Soluble or crystalline insulin is used where urgent action is required, *for example* in ketoacidosis when it is given either deep subcutaneously or intramuscularly or intravenously every few hours, monitored by blood-sugar levels, but during maintenance therapy it is usually given morning and evening before meals and a larger dose has a longer duration of action[17]. A long acting insulin can be added to either dose if required for better and more efficient control in special situations.

Semilente is a cloudy solution in contrast to the colourless solution of soluble insulin derived from cattle sources and is more liable to produce allergic reactions.

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* Specially contributed to the 'ANTISEPTIC'.

TABLE I

Showing the types of insulin and their combinations

	Type of insulin	Source	Added protein	Time of onset (hrs.)	Duration (hrs.)
Rapid acting	Soluble	Cattle or Pig or both	None	Within 1 hr.	6–8
	Semilente	Cattle	None	Within 1 hr.	12–16
	Actrapid	Pig			
Neutral	Nusol	Cattle	None	Within ½ hr.	6–8
Intermediate acting	Lente*	Cattle and Pig	None	2–4	28–32
	Globin	Cattle	Globin	2–4	18–24
	N.P.H.	Cattle and Pig	Protamine	2–4	28–30
	Rapitard	Cattle and Pig	—	Within ½ hr.	18–20
Long-acting	Protamin zinc	Cattle and Pig	Protamine	4–6	24–36
	Ultra-lente	Cattle	None	8	36 or more

* A mixture of 30% semilente (amorphous insulin zinc suspension) and 70% ultra-lente insulin (crystalline insulin zinc suspension)

Soluble insulin is strongly acidic (*p*H 3·2) but recently we have neutral soluble insulins like (*i*) Nusol (U.K.)/Actrapid (Denmark) and (*ii*) Biphasic (Rapitard) insulin. These insulins produce less local reaction at the injection site. Since the soluble or crystalline insulin is strongly acidic it produces a change in *p*H when mixed with the neutral variety and by altering the time-effect of insulin-mixture to a variable degree. Similarly it is unsatisfactory to mix soluble with Lente insulins, but it is now possible in those patients on Lente insulin who exhibit day-time hyperglycæmia and glycosuria and night time hypoglycæmia to mix Nusol/or Actrapid with lente and obtain good control. Further actrapid insulin being a pork insulin (pig neutral soluble insulin), is useful in the rare cases of species-insulin-resistance. The pig neutral soluble insulin is less antigenic and may have more hypoglycæmic potency than the beef type in diabetics, long-treated with beef insulin. In a new diabetic, there is no strong indication to use one of the neutral soluble insulins. The 'biphasic' (rapitard) insulin consists of a mixture of neutral soluble and crystalline insulins, offers an intermediate range of activity. This type of insulin is especially suitable for patients with a too high mid-morning blood-sugar level on lente (Insulin zinc suspension *IZS*). It is also suitable for patients requiring two injections a day. However, it is not of much use in clinical practice.

The intermediate and long-acting insulins are given in milder cases where insulin requirements are less than 45 units a day. These patients often have some endogenous insulin of their own and their regulatory mechanism is functioning to some extent.[1] Patients who need more than 60 units a day should have NPH (Isophane) in addition to soluble insulin. Isophane insulin, having no excess of protamine (50 mg per 100 units) or zinc can be mixed with soluble insulin more elegantly and is regaining its popularity in comparison with the Protamine Zinc Insulin or Lente (IZS) insulin.[9] Globin-insulin produces a similar effect to Lente-insulin but acts usually, for just under 24 hours. Since it has an added protein-oxglobin it produces greater local reactions. It is now seldom used.

TABLE II

Types of insulin and their peak Action in hours

Soluble (crystalline)	2—4
Semilente	6—10
Neutral variety	2—4
Lente	8—12
Globin	10—14
N.P.H	8—12
Rapitard (biphasic)	6—8
PZI	16—24
Ultralente	16—24

When insulin combinations are used, regular insulin should always be drawn first in to the syringe, followed by modified insulin. This would at most, introduce some regular insulin in the vial containing modified insulin which is acceptable. PZI insulin is hardly used at present because when used alone it is suitable only for diabetics needing less than about 30 units a day. Even then it has the disadvantage, compared with the equally long-acting ultralente (crystalline IZS) of producing more subcutaneous reactions; and if mixed in the same syringe, the ratio of regular and PZI insulin should be 2 : 1; otherwise excess protamine and zinc will tend to combine to a variable extent with soluble insulin and delay its action. If regular insulin is mixed with lente then the amount of regular insulin should not be greater than that of lente so as not to alter the *p*H of lente insulin significantly. The desired mixture should be prepared at the time of injection and no attempt should be made to mix the two types in the syringe before the injection. The time duration of insulin action also has been found to differ in individuals, therefore the same type of insulin does not work for the same period in all diabetics.

The injection should be intramuscular or deep subcutaneous but not intracutaneous. This can be achieved by stretching the skin instead of pinching it for injection and by introducing the needle vertically. Irregular absorption of insulin may occur when the drug is injected into the same site of induration. The same site may be used say, once in ten days. In diabetics, with some other disability, such as rheumatoid arthritis, insulin gun is recommended to carry around since this may avoid manipulation of a syringe by the patient.

Indications :—Next to control by diet, insulin represents the best treatment for diabetes. The findings of the University

Group Diabetes Programme (UGDP)[19, 20] that oral drugs enhance cardiovascular morbidity and mortality, might raise the proportion of patients on insulin in USA, since these findings have been officially endorsed by the American Diabetic Association, American Medical Association, and the U.S. Food and drugs Administration (F.D.A.). According to some British workers[21] "there is yet no firm evidence to show that insulin is superior in preventing degenerative complications in diabetics who cannot be controlled on simple dietary restriction."

In general, the indications for the use of insulin are:—(1) Ketoacidosis and coma. (2) Juvenile diabetics. (3) Diabetics having severe infection, azotæmia, major surgery or pregnancy. (4) Diabetes associated with pancreatic calcification (pancreatic diabetes). (5) The atypical ketosis-resistant young (type J) diabetics who require relatively large doses of insulin (80 to 150 units) for control. (6) Patients who cannot be controlled by other means available.

Drug-interaction:—To insulin-dependent diabetic patients suffering from angina pectoris or hypertension, concomitant therapy with *beta*-blockers such as propranolol should *not* be prescribed since propranolol would aggravate the insulin-hypoglycæmia and further the warning symptoms of hypoglycæmia—including sweating and tremor will not occur. This is an interaction which should be recognized.

Prescription of insulin dosage:—A ketoacidosis-prone newly discovered diabetic should be immediately put on diet and insulin. Nothing is more impressive and so prompt in restoring a sense of well-being and confidence in these patients as the first dose of insulin. In the majority of them, within a week of onset of insulin therapy, amelioration of polydipsia and polyuria, if any, and a sense of well-being are achieved. Pretibial and pedal œdema appear for the first time in some of the subjects. paraesthesias of existing neuropathy may be more distressing or they may appear for the first time during insulin-therapy possibly due to unmasking of occult thiamine deficiency. But all these are transient phenomena, lasting from 1 to 4 months at the most.

The dose of insulin is determined by trial and error. Proper treatment of hyperglycæmia should aim at maintaining physiological levels of insulin consistent with the varying phases of metabolic activity. Diabetics well-controlled with long acting insulin preparations will maintain higher insulin levels during the period of action of the preparation concerned and insulin levels are not likely to fall to low fasting levels even after exogenous fuel has been dealt with. Insulin thus tends to maintain the "fed" state which may lead to insulin ineffectiveness[6] and can also explain lipogenesis and weight gain as well as a rise in the serum triglycerides[18] in treated patients. Recently published studies have shown that regular insulin injection before each meal is superior to a single injection of long-acting insulin in controlling diabetes. This may be because premeal injections of regular insulin simulate physiological secretion of insulin in response to meals. However, it has to be admitted that the exogenous insulin enters the systemic circulation first while the endogenous insulin is first secreted in the portal circulation. Of late a number of reports have appeared which indicate insulin-like oral hypoglycæmics-may have an adverse effect on cardiovascular disease and mortality.[4, 10, 12] Further insulin may be a driving force in the synthesis of macromolecules in connective tissue[2] and this may have a basic pathological relationship to vascular disease in diabetes and similarly altered platelet function[11] has been reported under insulin's influence.

It should be remembered that the majority of diabetics will be regulated on a total insulin dose of about 20 to 40 units per day in two divided doses half an hour before the main meal and the dose gradually increased by 5 units every 2nd to 3rd day to get optimal results. Sugar in the urine is examined before breakfast, lunch and dinner. When the renal threshold is too high or too low or when it is altered by nephropathy, then control must be assessed from the blood sugar values alone ; which is estimated by the Folin and *Wu* method. The degree of control is assessed by the following criteria.[8]

Fasting blood sugar (mg%)		Post-prandial blood sugar (2 hours after.) mg %	24 hours' urine sugar
Excellent	110 or less	130 or less	No glycosuria
Good	111—130	131—150	upto 5·0 G.
Fair	131—150	151—180	upto 20 G.
Poor	151—220	181—250	upto 40 G.

I personally prefer that the patient has as physiological a range of blood-sugar as can be achieved without risk of disabling hypoglycæmia. Once the optimal results have been obtained then intermediate acting insulin like NPH or Lente may be substituted for, here the action lasts for about 24 hours and so only one shot is required about an hour before breakfast. The initial dosage of the intermediate acting insulin should be about two-thirds of the total dose of crystalline or regular insulin required, and then the dosage gradually increased. If more than 45 units of intermediate acting insulin are needed. it is better to give either soluble insulin alone or supplemental doses of soluble insulin. Glycosuria in a "second voided" urine sample (bladder is emptied half an hour before the test, the urine formed in the following half an hour is used for the test) before the evening meal, means that the dose of NPH or lente taken before breakfast needs increase, glycosuria before lunch means that the dose of soluble insulin taken before breakfast requires an increase while glycosuria in the fasting sample often indicates the need for an additional dose of NPH or Lente before the bedtime snack. This avoids the early morning hypoglycæmia. Some of the typical problems of stabilization and suggested corrections are presented below:

Problem	Correction
1. Pre-lunch glycosuria	Regular insulin *plus* NPH
2. Pre-dinner glycosuria and hyperglycæmia	Increase pre-breakfast NPH
3. Post-dinner glycosuria and hyperglycæmia	Reduce CHO in dinner or to have early dinner
4. Pre-breakfast glycosuria	Add NPH or NPH *plus* soluble insulin before bed time snack or predinner period respectively

Even in the absence of ketosis or severe infection some diabetics require 3 or even 4 daily injections of soluble (crystalline, regular) insulin for the maintenance of control. The majority of such situations can be controlled by combining crystalline and NPH insulins in the proportion of 2 : 1 in the morning and 1 : 1 in the evening[15]. Permutations and combinations should be tried initially and the dosage and type of insulin adjusted accordingly. It should be remembered that with the growth of the child and complicating infection the higher dosage of insulin will be needed for the effective control and similarly when unusual exercise is anticipated the dose of insulin should be reduced. In some cases of unstable diabetes, phenformin may be tried along with insulin. Thus a single prick of NPH or lente in the morning is followed by timed-disintegrated phenformin in the evening.

It is agreed by the majority of workers that metabolic control almost invariably prevents the development of cataract, acute and subacute neuropathies. It also helps in the achievement of better results from pregnancy[15], surgical procedures, accidents and the like. Further it is our experience that metabolic control is highly essential for the maintenance of positive health, active life and avoidance of serious infection.

Complications and problems of insulin therapy.—(1) *Reactions*:—(*i*) Localised and generalised allergic reactions and (*ii*) Hypoglycaemic reaction.

(*i*) *Allergic reaction*:—Localised erythema at the site of injection is probably caused by contaminants. This may be abolished by (*a*) merely changing among the different brands of available insulin such as beef and pork insulin, sheep and human insulin and modified pork insulin (*b*) use of denatured insulin. The denaturation of soluble insulin is done by boiling the vial for 15-30 minutes and then desensitising with such a denatured insulin every one hour and then increase the duration to two hours, etc. and after this may be treated with any of the other commercial available insulins without much difficulty.

Rarely insulin may produce a generalised allergic reaction usually with urticaria but occasionally angioneurotic œdema and anaphylactic shock may occur. The sera of these patients may contain antibodies which passively sensitise normal skin. These cases need desensitization starting with an intradermal inj. of 1/1000 unit of insulin and doubling the dose every 15-30 mts. according to the tolerance to 1 unit. Thereafter the drug is injected subcutaneously in increasing amounts until the desired dose is reached.

(*ii*) *Hypoglycaemia* :—Is a natural accompaniment of insulin therapy. However, repeated hypoglycæmia can result in permanent damage to brain and also results in secretion of contra-insulin hormones (growth hormone, glucagon, catecholamines) of which—growth hormone is most important and this can lead to production of insulin resistance[14].

Quite often, disturbed sleep, nightmares, nightsweating and morning headache in the occipital region are only experiences to indicate that the patient had nocturnal hypoglycæmia. On awakening in the morning, these patients may have three or four plus urine sugar due to secretion of contra-insulin hormones provoked by hypoglycæmia. This has been recognised as the Somogyi effect.

Patients on insulin must carry sugar or candy on their person and identification cards stating that they are diabetics.Administration of about twenty grams of glucose can combat hypoglycæmia induced by as much as 500 units of insulin injection. In prolonged hypoglycæmic in addition to parenteral glucose, use of mannitol is advisable.

Sorbitol, a poly-alcohol, is metabolized in the liver by non-insulin-dependent enzymes. It may be helpful in keeping the glycogen store of the liver replete and thus prevent severe hypoglycæmic episodes. The maximum utilisable amount of sorbitol is 50·0 Gms. per day and one teaspoonful of the 70% solution contains 5·0 Gms. of sorbitol.

2. *Insulin lipodystrophic changes,* may be prevented by rotating the sites of injections and bringing the insulin to room temperature before injection may also be helpful. The total volume injected at one time should ordinarily be within 1·5 ml. Highly concentrated insulin such as 100 units/ml. is available for cases requiring large doses of insulin.

3. *Transient presbyopia*:—This occurs in many patients during the early phase of insulin therapy. The bilateral temporary near loss of vision is due to a change in osmotic equilibrium between the lens and ocular fluids. This change tends to disappear in 2 to 4 weeks' time.

4. *Insulin resistance*:—Most severe diabetics require high doses at the beginning for control. Insulin resistance is defined as a state where greater than 200 units of insulin are required per day for more than two days. In practice about 75% of insulin needing diabetics hardly require more than 70 units of insulin per day for the satisfactory control of diabetics. It has been suggested that diabetics who need 70 and 200 units of insulin per day are in fact insulin insensitive. Insulin resistance is classified as primary and secondary. Primary insulin resistance is observed in those who are on long term insulin therapy. Virtually all insulin treated subjects show the presence of insulin binding antibodies after about a week of therapy and therefore causes of primary insulin resistance are: (*a*) high insulin binding capacity of plasma is important (vary from 60 units to 5000 units/litre). Normally insulin-treated individuals carry antibodies capable of binding about 10 units of insulin per litre of plasma [3]. Radio-active insulin provides a very sensitive means of detecting insulin binding antibodies. Since the insulin-antibody complex is biologically inactive, this accounts for immunological wastage of several hundreds of insulin units daily. The antigenicity of insulin used depends upon its source. Beef insulin for instance is found to be more antigenic than pork insulin.

Another rare condition where chronic insulin resistance is encountered is (*b*) lipoatrophic diabetes[7] (*c*) gross obesity[13] and in the tropical climate as ours (*d*) deterioration in insulin potency has to be thought of[24]. Insulin partly loses its potency when it is stored in high environmental temperature for more than 2 months (instead of storing in refrigerator). Therefore effectiveness of such insulin is below par necessitating the higher dosage of the same (*e*) refractoriness of peripheral tissue to insulin action and (*f*) the role of synalbumin antagonism in insulin resistant diabetes is perhaps not very significant.

Secondary insulin resistance is seen in certain infections particularly staphylococcal infection, diabetic ketoacidosis and in endocrinopathies like acromegaly, cushing's disease, thyrotoxicosis, Conn syndrome and pheochromocytoma. Insulin resistance is also found in cases of alpha cell carcinoma of the pancreas, where there is excessive glucagon secretion.

Growth hormone, adrenocorticosteroids, glucagon, catecholamines and placental lactogen are well known insulin antagonists. The most potent stimulus for growth hormone secretion is hypoglycæmia and excessive secretion of growth hormone may be the mechanism of insulin resistance produced by over insulization.[14] Placental lactogen is immunologically similar to growth hormone and can account for increased insulin requirements in pregnancy.

The management of insulin resistance can sometimes be very painstaking. One should try to find out the underlying cause which has necessitated this change in insulin dosage. It is obligatory to rule out secondary insulin resistance and if detected, it should be promptly treated side by side.

In primary insulin resistance (1) a change in the brand of insulin, for instance beef to pork insulin (Actrapid) may be helpful initially since pure pork insulin reduces the dosage by one-third and it resembles human insulin more closely than beef insulin. When available human insulin or horse insulin can be used instead. (2) Administration of ACTH injections and corticosteroids has proved very useful in decreasing the insulin requirements in about 50% of cases of insulin resistant diabetes.[16] Prednisolone or other equivalent corticosteroids may be given in dosage of 40-60 mg. daily, divided in 3 to 4 doses, along with soluble insulin in 3 to 4 divided doses in a day and slowly the dosage is modified. Usually corticosteroids are administered in the above dosage for ten days where-upon the improvement is evident. If there is no response after 4 weeks then the steroids are unlikely to be of any value. Corticosteroids reduce the serum antibody titre and thereby reduction in insulin binding capacity. Once the insulin sensitivity has been established as evident by declining daily insulin doses, the corticosteroids should be gradually tapered down by reducing about 10 mg. every 5 days so that at the end of 3 to 4 weeks patient is off the corticosteroid therapy, being maintained on soluble insulin in two divided doses in majority of previously resistant cases. (3) Oral hypoglycæmics such as tolbutamide and biguanides have been found beneficial in a few cases of resistant patients. The underlying mechanism is presumed to be non-affinity of insulin antibodies towards the endogenous insulin, secretion of which is enhanced and its peripheral utilisation is facilitated by the above drugs respectively. These drugs should be continued for atleast 2 weeks before being abandoned as ineffective. Occasionally the insulin antibodies act as autoantibodies, thereby antagonising the action of even endogenous insulin. (4) Use of Chymotrypsin, in these cases have been shown to be effective[23]. This was administered either 25 *i. u.* daily IM or same dose given every 6 hourly. as buccal tablets. The exact mode of action is unknown[23]. (5) Dimercaprol (B. A. L.) [5] found useful as an adjuvant in insulin resistant diabetes, as it has hypoglycaemic action[5] (6) If insulin requirements cannot be reduced by these means the dosage of insulin must be increased until the diabetes is controlled and for this there are insulin preparations available containing 320 units/ml to 500 units/ml. which permit the injection of smaller volumes of large doses. After sometime the requirement often starts to decline spontaneously [17].

ADVANCES: (i) *Monocomponent insulin,* which is virtually non-antigenic, may become widely available and thus may reduce the problem of insulin resistance. Whereas commercial insulin provides activity of 22 units/mg, monocomponent insulin has higher than 25 units of biological activity.

(ii) *Injection of beta cells* :—At the present time, techniques of separation of beta cells and their culture are being perfected. Its injection in the portal vein has resulted in a "cure" of experimental diabetes in animals. The injected cells usually take up in the liver and secrete insulin. Immunosuppressive therapy has to be continued to prevent rejection of the beta cells.

(iii) *Pancreatic transplants* :—This has been attempted in conjunction with kidney transplants, in longstanding diabetes with nephropathy, but the results have been poor.

(iv) A computer-controlled *artificial pancreas,* capable of administering insulin to diabetic patients according to their blood glucose changes, is being developed in Australia and Canada. This automatic device called an artificial pancreas will be produced commercially by the Miles Laboratories' Life sciences Department Elkhart (Indiana) and includes a small computer, blood sugar analyser, and precise dosage infusion system. This glucose sensor or monitor when implanted subcutaneously feeds in changes in blood glucose continuously to a computer. The computer is linked to an injection system which is programmed to release calculated amount of soluble insulin in the circulation. We hope this device may be soon available for general use in our country.

Summary.—Next to control by diet, insulin represents the best treatment for diabetes and in the UGDP study, unlike the sulphonylureas and biguanides tested, its use was not associated with any increased mortality and it may be 'safer'. Regular insulin is superior to long acting insulin in controlling diabetes. Further, today there has been a swing back to two injection dosage regimens (soluble insulin alone or soluble insulin *plus* NPH twice daily). If one could choose only one type of insulin for use in all circumstances, then soluble insulin, introduced to medicine nearly more than half a century ago, would certainly be the choice. It is necessary to avoid frequent or severe hypoglycaemic reactions.

It has been clear from all these discussions that to control diabetes with insulin needs quite a lot of expertise. However, perhaps the most important aspect of management is to take the time to educate the diabetic patient about the various facets of the management.

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OESTROGEN, HEADACHE AND ORAL CONTRACEPTIVES

The possible relationship between headache and the oral contraceptive is considered. In the present study, no association has been demonstrated between oestrogen withdrawal (as produced by oophorectomy, or cessation of exogenous oestrogen replacement therapy in oophorectomised females) or by exogenous oestrogen therapy, and the symptom of headache. This would support current theories and evidence which appear to implicate the progestogenic component of the pill as the most likely aetiological factor.—(W. H. Utian, *S. A. Med, Journal*, 22-4-1975).

A COMPARISON BETWEEN ULTRASONIC AND CLINICAL DIAGNOSTIC RELIABILITY IN EARLY PREGNANCY COMPLICATIONS

The diagnostic value of ultrasound is demonstrated in 300 patients suffering complications in early pregnancy. A detailed comparison was made dividing patients according to the clinical presentation and also correlating clinical and ultrasonic diagnoses with the final outcome. The percentage accuracy obtained by the clinician and the ultrasonic service are compared in the various subgroups. Once there are diagnostic problems, ultrasound is consistently far superior to the clinician in distinguishing the various early pregnancy complications with an overall accuracy of 87·2%, compared with 32·77%.

A knowledge of the differential reliability of diagnostic ultrasound is important if one is to use the method correctly and improve patient care. —(*S.A. Med. Jour.*, 22-4-1975).

HEPATORENAL SHUTDOWN*

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LITTLE is known about the hepatorenal syndrome which is a complex condition. It is known that patients with liver disease with or without hepatic failure at times go in for renal failure. This may be insidious or abrupt. Much controversy has arisen about the presence of renal failure for which definite explanation cannot be given on known factors. However retrospective and prospective case studies supplemented with histopathological and biochemical data have focussed some light in this dark area.

Hepatorenal shutdown otherwise known as the hepatorenal syndrome was originally limited to the renal failure associated with cholestatic jaundice but now the term has a broader perspective and includes renal failure from any hepatic disease. Whether hepatic failure precedes renal failure or *vice versa* is a question often debated. However, from clinical studies it is evident that hepatic lesions precede the renal aspects of the syndrome complex.

An understanding of the pathophysiology is essential to manage the delicate intricacies of this complex. Hepatorenal syndrome as already stressed, was originally introduced to describe deaths from hepatic and renal failure after cholecystectomy for prolonged obstructive jaundice and forms the first component of this syndrome. Jaundice and a diminution in the volume of urine appear to be the result of hypotension with a reduced blood flow to the liver and kidneys. It may ofcourse be reversible with prompt treatment.

The second component of this syndrome is seen in conditions which affect the liver and the kidneys simultaneously such as in Weil's disease, Amyloidosis, Toxaemia of pregnancy, carbon-tetrachloride and phosporous and copper sulphate poisoning. Here a direct injury to the tissues is the likely cause.

In recent years a third component has assumed importance and this comprises patients with cirrhosis and other related hepatic lesions who develop progressive renal failure. Such patients are usually refractory to diuretics.

The kidneys appear to be apparently normal on light microscopy. Hence the cause of the syndrome must be considered on the lines of disturbance of renal function. It is known that avid retention of sodium and a diminished response to water overload occur early in cirrhosis with ascites and return towards normal if treatment is successful. Similarly both filtration by the glomeruli and the flow of blood to the kidneys which are normal in the early stages fall progressively as resistance to diuretics develops. It seems possible therefore that a fall in renal blood flow or a decrease in the effective volume of extracellular fluid may initiate progressive renal failure by secreting aldosterone through the renin angiotensin mechanism.

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* Specially contributed to the 'Antiseptic'.

Factors such as haemorrhage, septicaemia, paracentesis are said to aggravate the process and are not the primary factors. Diuretics as such cannot also be a major causative factor.

Factors influencing ability to excrete water were studied in 34 patients with cirrhosis by Shear and co-workers. Statistically significant direct linear correlation was obtained between maximal urinary flow rate following water overloading and the simultaneous rate of total solute excretion. Urinary flow rate was not related to sodium excretion when dietary sodium was limited. However, when sodium intake was increased in patients who retained sodium the maximal urinary flow rate did not increase. Maximal urinary flow rate also was related to glomerular filtration rate. (G. F. R.). The GFR reduction in water-intolerant patients was due to primary haemodynamic abnormality characterised either by increased afferent arteriolar resistance or shunting of blood away from functional renal tissue. The finding of reduced para-aminohippurate excretions in patients with low GFR suggested that this shunting may have occured within the kidneys.

According to Dawson, shock alone was not responsible for the development of renal failure in operated obstructive jaundice patients. He stressed that patients with serum bilirubin level above 20 mg% were more prone to renal failure. Associated septicæmia was seen in his case study.

Studies on renal function have demonstrated reduced GFR and plasma flow, low urinary sodium concentration and high urinary specific gravity. These changes are similar to those that occur with reduced renal perfusion secondary to congestive cardiac failure or hypovolæmia, However, cardiac output and plasma volume are normal or increased in patients with liver disease.

From a retrospective study of 102 cases of cirrhosis with renal failure Shear *et al* concluded as follows: 62% of the patients developed hepatic precoma or coma, in 84% of patients with coma and in 60% of patients without coma, blood urea levels were elevated. Serum creatinine was also elevated. Uric acid, blood urea nitrogen ratio was greater than that seen in patients without renal failure, whereas creatinine, blood urea ratios were within normal limits. Prothrombin time was markedly increased. Serum sodium levels were normal in most cases. Hyponatræmia however, can occurs if the patient is overhydrated.

As a prospective study a detailed assessment of renal function was made in 32 patients who subsequently were followed up for periods upto one year. Maximal rates of urinary flow ranged from 0·3 ml to 26·6 ml/mt. In all cases progressive azotæmia was noted. No correlation was apparent between the type of liver lesion and the renal failure.

The pathological findings in the above cases were grouped as under :—

GROUP I :—Showing signs and symptoms and biochemical findings similar to acute tubular necrosis.

GROUP II :—Showing features of hypotension relatively high value of serum creatinine and a serum sodium value of 150 meq/l.

GROUP III :—Showed a marked decrease in GFR despite the absence of hypotension before the onset of azotæmia. These changes were not correlated with increase or decrease in body weight or with significant changes in hæmatocrit, hæmoglobin or serum electrolyte concentrations. However, blood urea values and serum creatinine were raised. Even after decrease in glomerular filtration, tubular functions apparently appeared normal as shown by low urinary sodium concentrations and osmolarity urine : plasma ratio more than one. Deterioration of tubular function occurred usually preterminally.

Other causes attributed to the renal failure are the reduction of effective renal circulation due to cortical vasoconstriction combined with medullary blood flow. Development of uræmia is attributed to the lowered renal blood flow which might be due to the vasodilatation caused by the presence of non-metabolised vasodilator substances. It is also believed that arteriovenous anastomosis are also opened.

Microthrombosis in the small vessels due to intravascular coagulation has been advocated by some workers. But heparin was tried without success but it is stated that if heparin started earlier, it could have a beneficial effect.

Another factor to be borne in mind is that uræmia may precipitate hepatic coma. This has been attributed to the hydrolysis of urea within the intestinal lumen with subsequent absorption and systemic effects of NH_3 .

Also measures employed in the treatment of patients with hepatic coma cannot be implicated as the causative factor for the renal failure. Neomycin has potential nephrotoxic effects but the effects are very late. Similarly induction of renal failure by restriction of dietary protein seems unlikely.

A series of biopsy studies of the kidney with the electron microscope revealed deposits in the mesangial matrix and along the subendothelial aspect of the basement membrane. Capillary wall changes were seen in patients with chronic liver disease. The deposits are thought to be globulin said to be derived from the break down of liver cells or produced by the damaged liver. It is described as hepatoglomerulosclerosis. Tubular lesions and nonspecific basement membrane damage have also been noticed.

In summary, Papper *et al* support the view that circulatory disturbances involving the kidneys, account for the renal failure and cites eight reasons which are :—

(1) Renal failure may develop extremely quickly.

(2) A reduced GFR, an initially concentrated urine in many instances, and a striking reduction in the urine concentration of sodium are all consistent with some diminution in effective renal perfusion.

(3) A modest reduction in blood pressure was due to broad circulatory disturbances.

(4) The onset of renal failure following mild gastrointestinal bleeding or paracentesis may also lend support to the importance of circulatory derangements, since a reduction in effective fluid volume results under both circumstances.

(5) The administration of isotonic saline, ascitic fluid, plasma, dextran or whole blood has been shown to bring a transient increase in GFR.

(6) Administration of the pressoramine, metaraminal is sometimes followed by increased insulin or creatinine clearance.

(7) The histological appearance of the kidney, which is variously described as normal or as demonstrating some minimal abnormalities of the tubules, is consistent with decreased renal perfusion.

(8) The observation in another series that the kidney from each of six patients dying with this syndrome functioned promptly when used as the donor kidney in renal transplantation is consistent with some readily reversible disturbance in the kidney, such as one of a circulatory nature. In the context of the above discussion, a case of hepatorenal shut down is now presented and discussed.

Case history :—Mr. S., 45 years of age was admitted in the Govt. Erskine Hospital, Madurai with signs and symptoms of hepatic failure due to infective hepatitis of 15 day's duration The patient was subsequently transferred to urology *cum* nephrology service because of oliguria progressing on to anuria of 24 hour's duration. No past history of renal disease, hypertension or diabetes was noted. On examination the patient was disoriented, intensly jaundiced with distension of the abdomen and the œdema of the legs. Flapping tremor was present and the liver was palpable four fingers breadth below costal margin. Purpuric spots were seen all over the body. Heart: regular; lungs: clear. Pulse 92/mt. B.P; 100/70mm of Hg.

URINE :—*Albumin*—trace, *sugar*-nil, *bile pigments*-present, *bile salts*-absent, *reaction*-acid, few RBCs, hyaline casts were seen Sp. gr: 1030.

Total count 11,200 : Differential count P68, L30, E2, *Icteric Index*-51 units, *Vandenberg*: delayed direct positive, *Serum alkaline phosphatase*: 8·47 units, *S G.O.T*: 12 units, *Blood urea* 230 mg%, *Serum Creatinine* 4·4 mg%, *Serum Na*: 124 *meq*/1, *Serum K*: 2 4 *meq*/1, *Bleeding time* 2 5 mts, *Clotting time* 4 mts, *Prothrombin time* 24 seconds.

The patient was anuric for 24 hours which was confirmed by catheterisation. A diagnosis of hepatorenal shutdown was made. As the condition showed no improvement with neomycin therapy, intestinal aspiration, intravenous glucose therapy and bowel wash, peritoneal dialysis were resorted to. Along with peritoneal dialysis, injection of dexamethasone 4 mg q 4 hourly was given. 1·5% dextrose dialysis solution was used along with 500 units of heparin/1, 50 mg of cephaloridine/litre, total of 40 litres of peritoneal dialysis solution was used. After the dialysis, the patient's general condition improved, oedema subsided and the blood urea level came down to 65 mg% and serum creatinine to 1·33 mg% The blood pressure was maintained at 110/83. The icterus decreased considerably. The patient started to pass urine on the third day of the dialysis and the urine output ranged from 800 to 1000 ml/day. The patient was discharged and six months after the discharge he is doing well and his renal function is normal.

Management :—Spontaneous renal failure that occurs in patients with liver disease is progressive and lethal. In some patients however renal failure may be potentially reversible as in this case. An intensive effort must be made to discover it and prompt treatment is essential. Cardiac and renal causes must be excluded. Infection, if any, must be detected and promptly treated.

Patients should be managed as if they had acute tubular necrosis with strict control of fluid and electrolyte intake.

Sodium salts should *not* be administered since most patients with liver disease retain sodium.

If gastrointestinal fluid loss is excessive, consideration should be given to replacing these losses with infusions of necessary solutions. Patients with hepatic disease and impaired renal function are very susceptible to over-hydration because of their inability to excrete water normally. Hyponatræmia frequently results from excessive fluid administration. Confirmed hyponatræmia should be treated with hypertonic saline solution to correct the calculated sodium deficit.

Decision regarding potassium therapy may be difficult but critical. Ordinarily potassium is withheld in patients with renal failure. However correction of K deficiency is essential to prevent hypokalæmic coma.

Dietary protein restriction, Neomycin therapy and judicious use of laxatives and enema constitute the major items in the management. Use of albumin infusions, mannitol and vasopressors were all tried but without success but may be useful in a given case.

We would like to stress the life saving role of dialysis and steroid therapy in the management of hepatorenal shutdown. Peritoneal dialysis has been employed with success in a few more cases in our department. The patients should not be denied the benefit of the dialysis. Steroid therapy is adjuvant.

It is difficult to enumerate the preventive measures to be taken in cases of cirrhosis. Any factor which results in decreased intravascular volume may be dangerous. Therefore, measures like paracentesis should be done with care.

On the whole, the prognosis is very poor but all possible measures should be undertaken including dialysis to tide over the crisis.

Summary.—A case of hepatorenal shutdown treated successfully is reported. Its pathophysiology and management are described. The role of peritoneal dialysis is stressed.

Acknowledgement.—We wish to express our grateful thanks to Dr. P. Venugopalan, Dean, Govt. Erskine Hospital for according permission to publish this paper.

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THE MANAGEMENT OF DELIRIUM TREMENS*

Drug Regimes for Delirium Tremens:—There are two important principles to follow ; (*i*) Drugs should be given as near as possible on a round-the-clock basis and not "p.r.n." or "as required"; (*ii*) the medication decided upon must be given in adequate doses as there is some evidence that under-dosage may aggravate rather than alleviate the clinical manifestations in alcohol withdrawal states.

One time-honoured remedy is to give paraldehyde (up to 10 ml) intramuscularly at four hourly intervals with chloral hydrate added at six-hourly intervals if agitation is present. A more acceptable regime is to use chloremethiazole, preceded by an antacid preparation if there is doubt about the integrity of the gastric mucosa. A standard method is to give four capsules (2g) stratum, then three capsules at night, depending on the time of commencement of treatment. The dosage is then reduced as follows : second day, two capsules in the morning, three capsules at midday and three at night ; third day, one capsule in the morning, one capsule at midday, two capsules at night ; fourth day, one capsule in the morning, one at midday and one at night ; fifth day, one capsule at night only.

In one well known treatment centre it has been found more satisfactory to administer chloremethiazole as an anaesthetist induces anæsthesia, the aim being to give sufficient dosage to produce satisfactory sedation (Salemann, C., personal communication). To do this four capsules (2g) are given initially, followed by two capsules (1g) hourly until the patient is sedated, though chloremethiazole is eminently satisfactory in the majority of cases, there are some in which it is of no avail. One then resorts to diazepam in doses of approximately 20 mg three times per day given orally, or by injection if convulsions are present.

Another regime is to use chlorprothixene which is prepared in 30 mg ampoules. The contents of one ampoule are given intramuscularly stratum. This is repeated in four to six hours if the patient is still restless. On the second day, early in the morning, 15 to 30 mg chlorprothixene are given intramuscularly and diazepam (5 to 10 mg orally) three times per day) may be added after reassessment of the patient's condition.

The following regime which consists of haloperidol and amylobarbitone sodium has also proved effective. Haloperidol (10 to 20 mg intravenously or intramuscularly) with amylobarbitone sodium (250 mg or 500 mg intravenously) is given on admission. Five to 10 mg of haloperidol are given intramuscularly at six hourly intervals over the next few days, depending on the patient's condition. A medium acting barbiturate, for example, amylobarbitone sodium, may be added at night if necessary, Paraldehyde (10 ml orally or intramuscularly) may be given as well, though this is rarely necessary. The extrapyramidal side effects of haloperidol are controlled by benztropine mesylate (2 mg per day) which may be given intravenously or orally. It is reasonable practice to administer benztropine mesylate through the same needle as the initial admission dose of haloperidol. Other effective antiparkinsonian drugs that may be used include procyclidine, benzhexol hydrochloride and orphenadrine hydrochloride.—(Sainsbury, J. Maurice, *The Medical Journal, of Australia*, 4-1-1975).

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RUMALAYA IN OSTEOARTHRITIS*

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OSTEOARTHRITIS or degenerative disease of the knee joint is very common among Indians. The ætiology is multifactorial and the symptoms may be very incapacitating—especially in Indians where the squatting position is commonly adopted and people have to walk long distances. The treatment can be conservative or surgical. Though surgical treatment of this condition like removal of osteophytes, debridement of the joint, osteotomy about the knee and arthrodesis may relieve a patient of his symptoms to a great extent, surgery is not indicated in all patients, nor do all patients agree to undergo surgery. Further, surgery also has its limitations and disadvantages. Therefore, the treating surgeon has to rely on conservative methods of treatment of this condition in the majority of patients. This treatment is mainly symptomatic. Many analgesics, anti-inflammatory drugs, steroids (intra-articular and systemic) have been tried. Besides drugs, physiotherapy is very commonly used. Radiotherapy has also been in use.

Rumalaya (an indigenous drug) has been used in rheumatoid arthritis and other conditions. It is made up of several indigenous drugs listed *alongside* in Table I, which are well known to and commonly used in Indian medicine. These ingredients exert actions shown in Table II, *overleaf*. Whereas the drug has been well tried all over the country in rheumatoid arthritis, the reports on its efficacy in degenerative arthritis are not many (*see* Table III, *overleaf*).

TABLE I

Showing the ingredients of Rumalaya tablets and Rumalaya cream

Mahayograj guggul	...	0·162 g.
Exts. Maharasnadi quath	...	65 mg.
Moringa pterygosperma	...	16 mg.
Pristimera indica	...	6 mg.
Rubia cordifolia	...	13 mg.
Tinospora cordifolia	...	10 mg.
Tribulus terrestris	...	16 mg
Shilajeet	...	16 mg.
Swarnamakshik bhasma	...	5 mg.
Shankh bhasma	...	65 mg.
Musk	...	1 mg.
Swarna (Gold) catalyst		

Prepared in the juices and decoctions of *Vitex negunda, Tinospora cordifolia Ocimum sanctum and Eclipta alba* etc.

CREAM—*Oils of* :—

Nardostachys jatamansi, Saussurea lappa, Almond bitter, Celastrus paniculata, Moringa pterygosperma, Vitex Negundo, Ocimum sanctum, Acorus calamus, Abrus precatorius Hyoscyamus niger	each 5%

---

*Specially contributed to the 'ANTISEPTIC'.

Extracts :—

Curcuma amada, Colchicum luteum, Litsea sebifepa, Gloriosa superba, Anacyctus pyrethrum, Myrica nagi, Nerium odorum		each 3%
Camphor	...	5%
Base—Bees-wax *q.s,*	...	*a d* 100%

TABLE II

Showing the action of each ingredient

Mahayograj guggul	Antiseptic anti-inflammatory, anti-arthritic
Maharasnadi quath	Analgesic
Moringa pterygosperma	Antibiotic, analgesic
Pristimera indica	Antibacterial
Rubia cordifolia	Tonic
Tinospora cordifolia	Diuretic
Tribules terrestris	Tonic
Shilajeet	Diuretic, Antiseptic Antiphlogistic
Swarnamakshik bhasma	Tonic
Shankh bhasma	Prevents degenerative changes
Musk	Gastric stimulant
Vitex negundo	Anti-inflammtory, analgesic

TABLE III

Showing the different authors who have reported on it

1.	Ahmed	1952
2.	Gogate	1957
3.	Agarwal	1970
4.	Deshpande	1972
5.	Ganpathy	1972
6.	Mehta and Kochar	1972
7.	Vaidya	1972

In view of the comparatively small number of reports we decided to use this drug to assess its efficacy and therapeutic value in this condition at the Maharaja Yeshwant Rao Hospital, Indore, M P.

Material and methods.—The trial was carried out on 90 patients with osteoarthritis of the knee joint who attended the out-patient department of M. Y. Hospital, Indore, between September 1972 and December 1973 (16 months).

The patients were referred from the general out-patient department to the "Osteoarthritis Clinic" which has been functioning in our department for the last two and a half years. The patients so referred were thoroughly examined after taking detailed history and once the clinical diagnosis of osteoarthritis was established, the patients were subjected to routine blood-examination, including erythrocytesedimentation rate, urine and radiological examinations, and the diagnosis was then only confirmed. In doubtful cases the Rosewaller test and uric acid estimation were undertaken to rule out other types of arthritis. In a few patients the synovial fluid studies and histopathological studies of the synovial membrane were also undertaken.

Synovial fluid :—In only five patients, the synovial fluid was aspirated before starting of Rumalaya therapy.

Findings :—The fluid was clear, and the sugar ranged from 80 to 100 mg% and the proteins from 3·5 to 5 mg%. Total erythrocyte count was 82,000 on an average and the total leucocytic count was 830. Clot test with 10 cc. of 5% acetic acid, showed good clot formation. These findings confirmed the diagnosis of osteoarthritis. We wanted to repeat the synovial fluid studies after treatment but all the five patients refused.

Synovial membrane :—Only in two was the synovial membrane taken out and subjected to histopathological study. In both it was before starting Rumalaya therapy. The synovial membrane showed hypertrophy.

Radiological findings :—The following types of radiological changes were seen :—

(1) Skiagrams were *normal*.

(2) Mild osteoporosis, subchondral sclerosis and cyst (*mild*).

(3) Irregularity of articular surfaces, osteophytes slight alteration of joint space (*moderate*).

Selection of patients for study with Rumalaya :—Only proved cases of osteoarthritis were subjected to Rumalaya therapy *i.e.*, those who had symptoms and radiological changes from normal to moderate, but showed no deformities, and no severe changes in their skiagrams. Although 256 patients took Rumalaya tablets, we have included only 90 in this series, on the following criteria :—(*i*) patient should have taken Rumalaya therapy for a minimum period of 6 weeks, (*ii*) he should have taken the medicine regularly without interruption, and (*iii*) he should have followed our instructions rigidly and attended the follow-up when called.

Patients presented with the complaints of pain, swelling, squatting difficulty, inability to walk long distances, and restriction of movements. Examination revealed diffuse tenderness around the joint, effusion, synovial thickening and some limitation of movements, wasting of the quadriceps group of muscles and crepitus.

The trial of the drug was carried out on two groups of patients (*see* Table IV, *below*).

TABLE IV

Showing the two groups with the number of patients in each

Group	Therapy	No. of patients
A	Only placebo	20
B	Rumalaya tablets, Rumalaya cream, physiotherapy and analgesics if required	70
	Total ...	90

It will be observed that the maximum number of patients were in the age-group of 41 to 50 years and the minimum number in the age-group of 71 to 80 years.

It will be seen that there were more females than males, the ratio being 7 : 2.

TABLE V

Showing the age incidence

Age-group	No. of Patients	
	Group A	Group B
30 to 40 years	1	8
40 to 50 years	12	27
51 to 60 years	4	18
61 to 70 years	2	12
71 to 80 years	1	5
Total ...	20	70

TABLE VI

Showing sex incidence

Sex	No. of patients	
	Group A	Group B
Males	9	28
Females	11	42
Total ...	20	70

All but four of the 70 suffered from primary osteoarthritis. In another four cases, there was a definite history of trauma.

It will be seen that bilateral and unilateral involvements of the knee joints was also in the same ratio.

TABLE VII

Showing the types of osteoarthritis

Type	No. of patients	
	Group A	Group B
Primary	20	66
Secondary	—	4
Total ...	20	70

TABLE VIII

Showing the unilateral and bilateral involvements of knee joints

	No. of patients	
	Group A	Group B
Bilateral	9	37
Unilateral	11	33
Total ...	20	70

TABLE IX

Showing symptoms with their duration in each groups

Symptoms	Maximum Minimum	Duration and number of patients			
		Group A		Group B	
Pain	Max. Min.	3 years 5 weeks	20	6 years 4 weeks	70
Swelling	Max. Min.	2½ years 6 weeks	18	2 years 4 weeks	61
Limitation of movements	Max. Min.	2½ years 8 weeks	13	4 years 9 months	31
Difficulty in getting up from squatting position	Max. Min.	2½ years 12 weeks	10	3½ years 6 weeks	34
Pain on walking long distance	Max. Min.	1 year 4 weeks	5	1½ years 4 weeks	29

It will be evident that pain and swelling were constant symptoms in almost all the patients, whereas the problem of squatting and inability to walk long distances was observed in only about 50% of them. Prior to the commencement of this clinical trial, the maximum period during which patients had been visiting the O.P.D. for treatment was 6 years and the minimum was 4 weeks.

TABLE X

Showing the different signs with the number of patients

Signs	No. of patients Group A		No. of patients Group B	
Tenderness	20		70	
Swelling due to :				
Fluid	11	18	24	61
Syn. thickening	6		27	
Both	1		10	
Limitation of movements (from the last 15° to 70° of flexion)	13		31	
Wasting	12		28	

TABLE XI

Showing changes since in the skiagrams

Changes	No. of patients Group A	No. of patients Group B	No. of patients Total
Normal	12	29	41
Mild	5	31	36
Moderate	3	10	13
Total	20	70	90

It will be seen that tenderness was a constant finding and the cause of swelling in about 40% of the patients was excessive synovial fluid while in the rest it was either due to thickened synovial membrane or both.

In 41 patients the X-ray pictures did not show any change. 36 patients showed mild changes (osteoporosis, subchondral sclerosis and cyst). Moderate radiological features (irregularity of the articular surface, with minimum diminished joint space in one or both compartments of the joint with osteophytosis) were observed in 13 patients.

TABLE XII

Showing the duration of Rumalaya placebo therapy

Duration	Group-A	Group-B
Maximum	4 weeks	7 months
Minimum	1 week	6 weeks
Average	3 weeks	10 weeks

In Group-A, placebo therapy was given for an average period of 3 weeks, in group-B, Rumalaya tablets were taken by the patients for 10 weeks on an average.

RESULTS :—The results were graded as under :—

(1) *Excellent* :—Full or over by 75% relief of pain ; full range of movements. No swelling, no problem in squatting ; and the patient went back to work.

(2) *Good* :—50 to 75% subjective improvement in pain, movements improved 50% or more, slight swelling present but not enough to worry the patient

(3) *Fair* :—25 to 50% relief in pain, swelling persisted in a degree sufficient to bother the patient, and squatting was difficult and painful.

(4) *Poor* :—Pain not relieved or only upto 25%, swelling did not subside, no improvements in movements. Stiffness of the joints persisted.

TABLE XIII

Showing the results in percentage

Grade	Group-A	Group B	
		6 weeks	10 weeks
1 Excellent	0%	0%	65%
2 Good	0%	71·5%	19%
3 Fair	0%	24·0%	12%
4 Poor	100%	4·5%	4%

Discussion.—Rumalaya tablets and cream were tried on 90 patients divided into 2 groups.

Group A :—Comprised of 20 patients who were given a placebo. The maximum number of patients were in the 41 to 50 years age group and had 9 males and 11 females. The eldest patient was 72 years. Bilateral and unilateral involvements were found in an equal number of patients. Pain and swelling were the commonest symptoms. In two patients pain and swelling were of 3 year's and 2½ years' duration respectively. In 12 patients no X-ray changes were found. In 8, only mild to moderate X-ray changes were recorded. No improvement was observed upto 3 weeks, except in two patients who spoke of some slight improvement in pain. This improvement in 2 patients could be psychological since they were also coming to take medicine with other patients. After 3 weeks the placebo therapy was discontinued.

Group B :—70 patients with osteoarthritis (64 primary and 4 secondary) of the knee joint were included in this group. 28 patients were males and 42 females. The maximum number of patients were in the age group of 41 to 50 years, the oldest was 80 and the youngest 32 years of age. This patient had sustained condylar fracture of the tibia about 10 years ago. In 30 patients both knees were involved and in 40 others only one. All the 70 patients complained of pain, the maximum duration was 6 years and minimum was one month. Swelling, the second presenting symptom was present in 61 patients. The cause of swelling was a thickening of the synovial membrane and the collection of fluid or both. Movements were limited ranging from the last 15° of full flexion to 70° flexion ; limitation of movements were seen in 31 patients. No radiological changes were seen in 29, mild such changes were seen in 31 and moderate ones in 10 patients.

These patients were given Rumalaya tablets in a dose of 2 *b.d.*, for a minimum of 3 weeks. 24 patients continued the same dose for a longer time, while in others the dose was reduced to one *t. d. s.* after 3 weeks. They used also Rumalaya cream at least once a day. Aspirin gr. 20, *t. d. s.* and physiotherapy were adjuvants for a few patients for a few days (maximum being one week). Five patients in this group complained of gastric fullness. In 2 patients Aspirin was responsible for this while in the other 3 patients, two were perfectly comfortable after reducing the dose, while one patient was lost to follow-up. In 71·5% of the patients the results were good and in 24% the results were fair. When the treatment was strictly continued regularly for 10 weeks or more, 65% of the patients showed excellent results and good in 19% and only fair in 4%.

The patients did not show any relief of symptoms in the first week of Rumalaya therapy, but from the 2nd week onwards, they *did* feel improvement as evidenced by the subsidence of pain and diminution in the swelling. By the 3rd week, 25% relief was evident in the majority of patients. After 3 weeks of Rumalaya therapy there was sudden and rapid improvement; so much so that 66% of the patients showed 70% relief of their symptoms by the 6th week. 65% of those cases who continued the therapy upto 10 weeks or more showed 80 to 90% relief and 19% of the same group of patients showed about 75% relief. It is evident that when the therapy was continued uninterrupted for a period of 10 weeks or more 84% of the patients had excellent to good results.

Conclusion.—(1) Rumalaya tablets are safe to use, side-effects being negligible, so they can be continued for a long time.

(2) To have the best results they should be supplemented with Rumalaya cream externally and physiotherapy. In several patients analgesics like Aspirin may be given initially to control pain.

(3) Rumalaya therapy must be taken for a minimum of 6 weeks without break. Treatment up to 10 weeks or more give excellent results.

(4) An initial dose of 2 tablets twice a day is necessary for about one week. This may be reduced to one tablet three times a day and from the 6th week onwards one twice a day.

(5) Rumalaya Cream when used supplementally with the oral tablets quickly overcomes the spasm and helps in movements of the joint which progressively improves.

Acknowledgement.—We are grateful to Messrs. The Himalaya Drug Co. Bombay for the liberal supply of Rumalaya tablets and cream and also for the fellowship to Dr. G. U Chera. We are also grateful to all the patients who willingly attended our Osteoarthritis Clinic for treatment and also for, the follow-up. The valuable help we received from Dr. H. L. Dhupar, Jt. D.H.S., *cum*-Superintendent, MY Hospital, Indore and Dr. R. C. Rallan, Head of the Department of Orthopædics, deserve our most grateful thanks.

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TRABECULECTOMY

Many operations are used or have been used to control glaucoma. In recent years the operation of trabeculectomy has been used extensivly in the hope that the success rate, as measured by control of extraocular pressure, maintenance of visual field and visual acuity, would be superior to other surgical procedures. It is used in chronic simple glaucoma and is based on the proposition that obstruction to aqueous outflow is in the trabeculum. A short length of the canal of Schelum with its trabecular adnexæ is excised leaving two cut ends of the canal open directly into aqueous humour. However, in a large number of operations there results a filtering bleb similar to that seen in the filtering operations for glaucoma.

In a recent publication, Ridgway describes the long term follow up of 203 trabeculectomy operations performed between 1969 and 1972. As 31 of these eyes had already settled on medical therapy after an attack of angle closure glaucoma, they have been excluded The remaining 149 eyes were affected by chronic simple glaucoma, chronic angle closure glaucoma, haemorrhagic glaucoma, post traumatic glaucoma or developmental glaucoma.

Of the first group in 71% glaucoma was controlled by surgery alone in 16% it was controlled with additional medication and in 13% the operation was a failure. In the second group in 84% glaucoma was controlled by surgery alone in 7·5% it was controlled with additional medication and in 8·5% the operation failed. When these two groups are combined, in 77% the condition was controlled by surgery alone, 12% required medication and in 11% the operation failed. Of the haemorrhage group in 31% the condition was controlled, 23% required medication and in 46% the operation failed and in the cases of secondary glaucoma in 20% it was controlled, 40% required medication and in 40% the operation failed. When the operation was performed for developmental glacoma, in 66% of eyes surgery alone was successful, and in 33% additional medication was required.

Cataracts developed or progressed after operation in seven eyes and field loss progressed to loss of visual acuity in six. Malignant glaucoma occurred in two eyes, and in two eyes of a patient with rheumatoid arthritis, ciliary staphylomata appeared over the operation site.

The authors claim a success rate of 79% on the basis of controlled intraocular pressure and maintenance of visual acuity. This figure is comparable with results achieved with other filtering operations for glaucoma. Their experience with this operation indicates that, if the operationf ails, it does so soon after operation and almost always within one year of surgery.—(Editorial, *The Med. Jour, of Australia,* 1-3-1975).

ENTEROCYSTOPLASTY

(A Case Report)

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VARIOUS ingenious methods of enlarging a contracted bladder by the application of an isolated segment of the intestine have been evaluated. Von Mikulicz (1898) was the first to perform enterocystoplasy in man. After the discovery of antibiotics, the hazards of infection were reduced and a rapid extension of these techniques was rendered possible.

Couvelaire (1950) reported on various techniques of ileocystoplasty. Cibert (1957) reviewed his results and the operative problems. Gillvernet *et al* (1957) pointed out the advantages of using the colon in preference to the ileum. Turner Worwick (1967) and Kuss (1967) had favoured the use of an isolated segment of the cæcum for bladder replacement.

Indications for enterocystoplasty :—(*a*) Fibrous contracture of the bladder due to:—(*i*) Tuberculosis, (*ii*) Irradiation, (*iii*) Bilharziasis (not common in India) and (*iv*) Longstanding ulcerative cystitis. (*b*) Interstitial cystitis.

Preoperative estimation of the patient's hæmatological cardio-vascular and cardio-respiratory status is as important as a knowledge of the renal function. Sigmoidoscopy and barium enema are imperative in colocystoplasty. Sterilization of the gut can be achieved satisfactorily by using Neomycin. Blood urea and renal functions should be within normal limits and the urine should be made sterile before surgery.[8]

Preoperatively the technique should be perfect and stitching and approximation should be meticulously correct.

Wound contamination by intestinal bacteria can be minimized by using careful surgical technique. It is wise to drain the newly constructed bladder by two catheters put in *per* urethra and also suprapubically.

Post-operative care of the ileus and wound infection involves the use of nasogastric suction, intravenous alimentation, electrolyte-replacement and antibiotics. Peritonitis can be prevented by peritoneal drainage.

Classification of enterocystoplasty :—(1) Ileo-cystoplasty, (*a*) T loop type (Pyrah and Raper, 1955), (*b*) Ring loop type (Scheele, 1941), (*c*) Patch type (Tasker, 1953), and (*d*) Cup patch type (Goodwin *et al* 1958), (2) Sigmoidocystoplasty, (3) Cæco-cystoplasty, (4) Ileo-cæcocystoplasty and (5) Total replacement of the bladder by the colon.

A successful operation brings about a marked reduction in frequency and in dysuria. The relief of pain is almost complete. The bladder capacity increases by 100 ml. to 400 ml., The patient passes urine freely with adequate control. Infection is noted intermittently in most patients and some persons have a tendency to develop calculi.[8] No significant changes are noticed in renal functions and electrolytes after these operations.[4]

CASE REPORT :—Mr. N. an adult male 35 years of age, receiving treatment for pulmonary and urogenital tuberculosis for the last six months, was admitted to the male surgical *C* ward of this hospital on 26-7-73 with complaints of marked frequency of urine and dysuria three years' duration. The frequency was the same both in the day and night. He used to pass urine every 15 to 20 minutes. The results of routine investigation were within normal limits. Cystogram showed a marked reduction in the capacity of the bladder by about 10 to 15 ml. (*see* Fig. I, *above*). Residual urine was *nil*. Typical cup patch type ileocystoplasty was done to increase the capacity of the bladder.

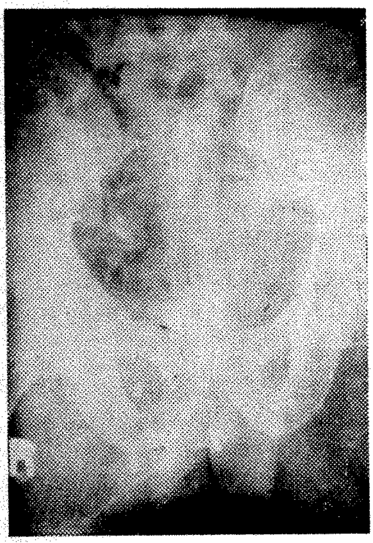

FIG. I. Cystogram *before* operation Note the size of the bladder (Capacity—10 ml.).

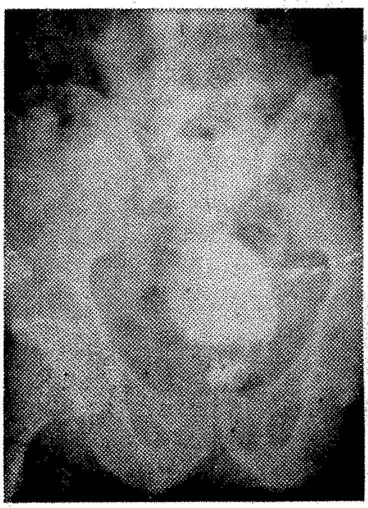

FIG. II. Cystogram *after* operation; compare the size of the bladder with Fig. 1. (Capacity—100 ml.

Post-operatively the patient behaved normally except for the mucoid discharge in the urine which was a source of trouble to the surgeons as well. Therefore, it is advocated the ideal loop should be denuded of mucosa-an almost bloodless procedure and technically not very difficult, to get rid of the mucoid discharge. Bladder capacity increased to about 100 ml. (*see* Fig. II, *p. 536*) after the cystoplasty.

Summary.—A case of ileocystoplasty is reported with a suggestion to denude the ileal mucosa in order to get rid of post-operative mucoid discharge.

Acknowledgement.—We are thankful to the Principal, J. L. N. Medical College for permitting us to use the Hospital records in the preparation of this case report.

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CONGENITAL BILATERAL ANOPHTHALMOS

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CONGENITAL anophthalmos refers to an orbit without a globe. No eyeball however small can be found in the orbit. At birth the orbit is small. The lids, if present, are small with various malformations.

This congenital anomaly is quite rare. After its first report in 1557, further reports have been made by Bartholin (1657), Collins (1887), Van Duyse (1899), Van Hippel (1900), Sorsby (1934), Recordon and Griffiths (1938), Schwartzman and Maffia (1939), Appelbaum and Marmelstein (1943). Warburg (1960), Campo and Balboa (1960), Warfel (1961), Michaels and Zugsmith (1963), Imam (1964), Duckworth (1966), Cernea *et al* (1969), Ergun (1969), Gougelmann (1971), Mehra (1965), Maria and Shukla (1965), Ingle, *et al* (1966), Maria, *et al* (1967), Mahanta and Praharaj (1968). *The last five reports are from India.*

Because of the rarity of the anomaly and paucity of reports in Indian literature, we report this case of congenital bilateral anophthalmos.

Case report.—A two days' old male child was brought to the outpatient's department of this hospital with the history that he had kept both eyes closed since birth. The delivery of this full term child was normal and his birth-weight was 2 kg. and 200 gm. He had cried just after birth and was not cyanosed. He had passed urine but had not passed the meconium. When boiled and cooled water was given at two hour intervals; he could easily swallow but vomited after one hour of feed. Mother's milk was not given. There was no convulsion or vomiting.

Mother was not ill at any time during pregnancy. There was no history of taking any drugs or X-ray irradiation. Parents were healthy and did not suffer either from venereal diseases or ocular defects. There was no consanguinity in marriage. There were three other siblings, all sons and healthy, the deliveries being full term, normal. There were no congenital deformities.

On examination the subject was 11½" in length and weighed 2 kg. Fontanelle were normal. Examination of eyes revealed that both the orbits were small. Eyelashes were present on the right side and absent on the left. Palpebral fissures were narrow. Eyeballs could neither be seen on retraction of lids nor felt on palpation. Lids were kept closed.

(*see* Fig. I, *below*). Heart and lungs were normal. Abdomen was distended. Superficial veins were prominent over the abdomen. Peristaltic movements were seen. It was tympanitic on percussion. Liver and spleen were not palpable. Bowel sounds were heard.

The anal opening was small, through which a catheter could be passed for not more than one inch. Next morning the child had bilious vomiting. The abdomen was more distended and the baby was drowsy. The parents took him away from the hospital against medical advice, later it was learnt that the baby died on the way home.

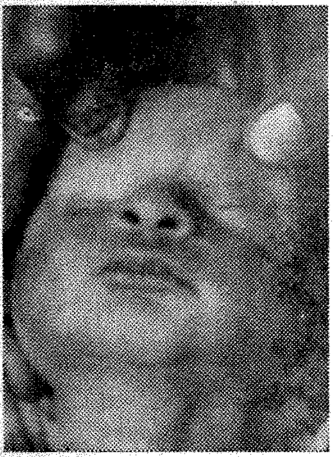

FIG. 1.

Routine urine examination was normal. Hb–10·4 gm%, D. C. - Neutrophils-50%, Eosinephils-2%, Lymphocytes 46%, Basophils-2%, Monocytes-*nil* TWBC — 6200/cmm, Serum VDRL was negative. X-ray of orbits did not show any abnormality. X-ray of chest was normal. X-ray of abdomen showed features of small bowel obstruction. Serum VDRL of both parents was negative.

Discussion.—Three embryological types of anophthalmos have been described by Mann (1937).

(*1*) *Primary anophthalmos* :—It is due to the failure of the formation of optic pits, which normally appear at 2 mm. stage that is in the 3rd week of intrauterine life. Rest of the brain, orbit, other mesodermal structures like sclera, cornea, non-ectodermal uvea, muscles, nerves are unaffected. Usually this condition is bilateral.

(*2*) *Secondary anophthalmos*:—It is due to the absence or the abnormal development of the fore brain as a whole. It usually results in nonviable monsters.

(*3*) *Degenerative anophthalmos* :—It is due to subsequent degeneration of a primarily formed optic vesicle, to a small fibrous nodule or rudimentary lens structure. There is no gross anomaly of the brain.

The pathogenesis of this condition is far from clear. No particular sex incidence is described. Transmission through parents has been reported only rarely (Mann). Hereditary anophthalmos in white rats, transmitted through affected females has been noticed by Yudkin. Chromosomal analysis, where done, is reported to be normal.

The theory of suppression of growth of the optic vesicle by thickened amnion, postulated by van Duyse (1899) is not convincing (Mariaetal). Campo and Balboa described a case of bilateral congenital anophthalmos in which the parents, and grand parents were syphilitic. An environmental factor working for a short time at the right moment seems more likely because of the sporadic isolated incidence, bilaterality, nonconsanguinity, and experimental suppression of optic vesicle in animals by various teratogens. The rare familial cases are obviously germinal in origin. Probably multiple factors are playing their role in the origin of this defect.

Congenital anophthalmos is rarely associated with other defects like supernumerary digits, cleft palate, congenital heart disease, hydrocephalus, atrophy of optic foramen, cerebral hemiatrophy. (Cerenen *et al*) In the present case there is a possibility of associated congenital obstruction of the intestines which caused small bowel obstruction.

In managing a case of congenital anophthalmos, the problem is to transfer a small inadequate socket into one that will retain a satisfactory prosthesis with reasonable cosmetic result. A conservative management consisting of progressive dilatation of the socket with mechanical means is advised, though the usual approach has been by extensive surgical dissection of the eyelid, and socket, (Kennedy, 1973).

Summary.—A case of congenital bilateral anophthalmos is reported. Relevant literature is reviewed and a conservative method of management is suggested.

Acknowledgement.—We are grateful to Prof. R. N. Rath, Principal and to Prof, D. Misra, Superintendent, M.K.C.G. Medical College, Berhampur (Gm) Orissa for according us permission to report this case.

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The Antiseptic

Vol. 72 | OCTOBER 1975 | No. 10

Editorial

REGULAR TELEVISION VIEWING IS NOT WITHOUT HAZARDS

THE latest in scientific achievements for the delectation of the people is the Television which has come to stay and is now becoming more and more popular in our country, and T. V. sets have already been in use in our city not only in public institutions but also in the richer households.

So the hazards in regular Television viewing as reported by researchers in Australia will now be presented. The report has warned that television "must not become a major educative tool" because "it cannot instruct nor therefore enlighten".

It has also warned that regular television viewing can be socially and physically dangerous. A 213 page report summarises the work on the effects of television on the human brain carried out in various parts of the world including the USA, Canada, Britain and Europe. We are told that the result of television viewing can be 'social breakdown, alienation of the individual from society and himself and a state resembling severe brain damage in the viewer'.

A team of 13 researchers carried out the study for the Australian Post Office. The study says television produces a state of habituation approximated to the destruction of important brain structures. However, the habituation clears up in a few days.

"If one of the purposes of education is to produce active responsible citizens with a real understanding of their world and affairs, it become obvious that the informing function of television must not be allowed to become a major part of education".

" While it may play a small but vital role in providing knowledge, it must be enmeshed in a total process which is creative, dynamic and purposeful".

The researchers claim that for those already highly motivated to learn, television may be more of a nuisance than a help. The researchers claim that under the stimulus of television, the function of the left cortex of the brain is effectively reduced to tracking changes on the television screen.

Their work suggests that the continuous trance-like fixation of the television viewer is not "purposeful attention" but distraction.

Effects of colour television can be more dangerous than black and white, as the right cortex of the brain becomes occupied with processing the colour signal. This cuts down the time it has for checking and cross-checking information, and reduces communication between both cortices or brain sections.

The researchers say television is used mostly by people wishing to escape from their own psychological problems and who are the least concerned with the outside world. Television isolates them from the real world and can result in the viewer being out of touch with reality for sometime after the television set is switched off.

We wish only to sound a note of caution and not condemn the new innovation, which has its own merits and advantages. It is neither wise nor possible to halt scientific progress in different directions and at different levels.

HEART RATE, PERCEIVED EXERTION, AND ENERGY EXPENDITURE DURING RANGE OF MOTION EXERCISE OF THE EXTREMITIES: A NURSING ASSESSMENT

The findings demonstrated a statistically significant difference in all parameters measured for the activities studied. These measurements were consistently higher for the active leg exercise than all other activities studied. Significant linear relationships were demonstrated between energy expenditure and heart rate, and between energy expenditure and rating of perceived exertion for all activities studied. Transformation of the heart rate data to net values showed this line rarity to begin at a mean oxygen uptake of 182 ml/min.

The provision of assitance by the nurse was demonstrated to supply approximately one half the energy required for the exercise unassisted and the use of active range of motion increased tidal volume from 100 to 400ml per respiration. The techniques of respiratory calorimetry provide a means for nurses to study man as a living being (the central focus of nursing's interest), and hold promise for answering the questions :—what are the most effective forms of nursing ; and what effect does that nursing have on the person nursed.

Further studies are recommended which utilize the techniques of respiratory calorimetry to measure the effect of nursing activities on both the patient and on the nurse. One such study suggested by the outcome of the present research would measure the amount of energy used by the practitioner in the use of assisted range of motion exercise. Another specific investigation suggested by the finding of this study is what effect will active range of motion exercise have on pulmonary ventilation in patients with chronic obstructive lung disease ? In addition, the linear relationships between energy expenditure and heart rate or perceived exertion need to be evaluated, in the clinical setting as well as in the laboratory for a variety of activities not previously studied.—(Rosemary, LTC., McCarthy, T. ANC, *Military Medicine*, January, 1975).

GLEANINGS

MEDICINE AND THERAPEUTICS

Hypotensive treatment for acute myocardial infarction—(*British Medical Journal*, 15-2-1975).

The prompt recognition and consequent immediate treatment of arrhythmias in coronary care units has left the main causes of death as heart failure and cardiogenic shock. These complications are related to the amount of cardiac muscle necrosis. Large infarcts have a higher mortality than small ones. That might, perhaps, have been expected, but the effect was somewhat masked before the otherwise lethal but treatable arrhythemias had been reduced in coronary care units, chiefly by the skill of the nursing staff. If, then, some means could be found for reducing the extent of the infarction, this might further lessen mortality—a hope which until recently appeared to be difficult or impossible to achieve.

After an acute myocardial infarction there is an ischæmic zone around the area of irreversible necrosis, and this zone may or may not survive. Factors which reduce myocardial oxygen consumption favour the survival of the ischæmic zone, and these include a lowered velocity of contraction, decrease tension in the ventricular wall, and slowing of the heart rate. Efforts to change these factors in a favourable direction might lessen the size of eventual infarction and reduce the risks of death from heart failure and shock.

A method for assessing the size of myocardial infarction has been pioneered by American workers at San Diego and St. Louis. They have studied the rate of rise of the enzyme creatinine phosphokinase (CPK) after myocardial infarction. By serial studies thay have been able to predict the ultimate peak levels of CPK from measurements during the first seven hours after admission. They claim that the serum levels of this enzyme, particularly when the cardiac isoenzyme is analysed, indicate the extent of myocardial necrosis and that treatment which leads to observed CPK levels being lower than those predicted from the initial values can reasonably be considered to have reduced the size of the final infarct. These authors have now found that in 14 previously hypertensive patients who were admitted to hospital with acute myocardial infarction, lowering of blood pressure with trimetophan (a ganglion blocking agent), resulted in CPK levels 24% loss than the predicted values. The assumption is that some 24% of jeopardized myocardium was thus salvaged from infarction. Their patients were not markedly hypertensive, the mean arterial pressure was 114 mm falling to 88 mm with treatment.

Coronary blood flow to the left ventricle is largely dependent on aortic diastolic pressure, so it might seem paradoxical to treat myocardial infarction with hypotensive agents. Until now there has been considerable concern in the management of acute infarction to avoid the undue hypotensive effects of analgesics, and most centres temporarily stop or reduce hypotensive therapy in patients with known hypertension after acute infarction. To suggest, therefore that hypotensive treatment may be beneficial is revolutionary; the findings of Sheel and Sobel indicate a way in which an inroad might possibly be made on the residual mortality. The mechanism seems logical enough—the treated patients showed a reduction in the mean left atrial pressure (the left ventricular filling pressure) while they continued to maintain a staisfactory cardiac output.

This series of 14 patients is too small for any firm conclusions to be drawn about hypotensive treatment and prognosis after acute infarction. Shell and Sobel suggest that the time has come for more extensive studies of hypotensive treatment after myocardial infarction both to assess the difference between predicted and observed CPK values and, more important, the effects on survival and other clinical features. Clearly such studies will need very careful monitoring of blood pressure. Many patients with acute myocardial infarction have hypertension at admission, probably due to anxiety, heart failure or pain, while later readings may often be normal. It could be dangerous to inflict hypotension on such patients. The blood pressure should be reassessed after treatment with analgesics and for heart failure where indicated, before hypotensive therapy is started. It could well be that such trials will show a reduction in mortality in hypertensive and perhaps also in normotensive patients.

PAEDIATRICS

Suicide in Children—(*Brit. Med. Jour.*, 15-3-1975).

The myth that children do not become clinically depressed, only miserable has been firmed squashed by a number of recent observations. The misconception has survived until now because depression in children and young people is often expressed in indirect ways—feeling of boredom, being fed up, finding nothing worthwhile to do, believing their appearance, their selves, and the world to be all wrong—or it is cloaked by aches and pains, dangerous excitement seeking, or delinquency.

Children and young people do not only threaten suicide; they may carry out their threats, as was highlighted by the suicide of a schoolgirl in Southampton. Shaffer made a careful study of all suicides occurring under the age of 14 years between 1962 and 1968 in England and Wales. surveying information from school medical and social records, but he did not talk to the families themselves—a humane limit applied by the Registar General. In all 31 children and young people killed themselves during the period studied, an incidence of 1 child in 800000 of the population only 0·08% of all suicides of whatever age. No child under the age of 12 years killed himself. More boys than girls committed suicide, and the boys tended to use highly lethal method such as shooting and hanging, while girls took overdoses or used gas. Suicide notes indicated intense feeling of anger and a wish to avoid punishment or humiliation for disciplinary problems at school.

The age of onset at 12 years coincides with pubertal changes with their associated adolescent turmoil, a maturing concept of death, and less supervision giving more opportunity to carry out suicidal acts. What factors should alert the practitioner to think about the possibility of suicide? Should threats of suicide be taken seriously? Only 40% of the child suicides had in fact made threats beforehand, while up to 10% of referrals to child guidance clinics in once seris had made suicidal threats or gestures. However, it is salutory to note that 30% of Shaffer's deaths were in children attending or waiting to see a child psychiatrist, though very few because of previous suicidal threats.

Suicidal threats should, then, be taken seriously as cries for help, but they are not in fact predictive of suicide itself in children and young people. Personally profiles found commonly among suicides included solitary children of superior intelligence attending grammer schools, culturally distant from less well educated parents; often the mothers were mentally ill and the children depressed, in conflict and withdrawn, having stolen or stayed away from school. Another group were impetuous, aggressive, with violent outbursts suspicious and resentful of criticism andagain often in trouble at school. These are familiar clinical patterns and there are additional factors which may give suggestive pointers—disturbed family backgrounds and divorce, and families where parents or siblings provide models by having attempted or succeeded in committing suicide. Access to means and the opportunity are the final factors, and this can include literature describing ways of committing suicide.

These children have met failure of emotional support in their environment early in their lives, and as Winnicott stated "it is the death that happened, but was not experienced, that is sought...sending the body to death, which has already happened in the psyche...suicide is no answer...it is a despair gesture".

REVIEWS OF BOOKS

Topics in Blood Banking—By NEVA M. ABELSON, M.D., 1974, Pp. 163; Lea and Febiger, Philadelphia U.S.A. Copies available with M/s. K.M. VERGHESE and Co., 104, Hind Rajasthan Building, Dadasaheb Palke Road, Dadar, Bombay-400014. [Price : $ 9·75.

Dr. Abelson has done a great service by bringing out *Topics in Blood Banking* in which she summarizes and reviews the many important developments that have occurred within the past few years. The book should be most welcome to all blood bank technologists and others interested in the subject, particularly to those who have little access to current literature in this field.

The book is divided into 7 chapters dealing with Blood Bank Organization, Blood Donor Selection, Blood Storage, Diagnostic Reagents, Pre-transfusion Tests, Blood Components and Exchange and Fœtal Transfusion. The chapter on Blood Bank Organization reviews the scope and thoroughness of two nation-wide Inspection Programmes conducted to encourage uniform practices in blood banks throughout the Nation, one by the American Association of Blood Banks (AABB) on a voluntary basis, and the other mandatory by the Food and Drug Administration (FDA), United States Public Health Service. It also indicates what is expected of a good blood bank. It should serve as a valuable guide to blood bank organizations in all other countries.

The book is particularly good on the discussion of quality control of diagnostic reagents, the relative usefulness of procedures directed to the detection of Hepatitis B Antigen (HBAG), safety measures in blood banks and suppression of *Rh* immunization. We find throughout the book much practical advice from the author's rich experience.

It is a book that no blood bank technician and no blood bank library can afford to be without.

K. S. RANGANATHAN.
M.R.C.S., L.R.C.P.

Future Trends in Inflammation—Under the Patronage of the President of Italy—Editors–G.P. VELO, VERONA, D.A. WILLOUGHBY, London and J.P. GIROUD PARIS—Pp. 480. Published by Piccin Medical Books, Padua and London.

This meeting on "Future Trends in Inflammation" was the first of what is hoped to be a series of meetings organized by the European Biological Research Association. The European Biological Research Association promotes active scientific and clinical collaboration among the member countries of E. E. C. In addition it encourages exchange of information between scientists and clinicians from centres all over the world.

In preparing these proceedings the Editors have attempted to capture the spirit of the meeting by publishing the discussions *verbatin.* It will be seen that the discussions are exciting and must have formed an important part of the meeting.

This large volume of nearly 500 pages relates to Inflammations in the human body the approach to their diagnosis and therapeutic approaches prostaglandins and the role they play in pathological conditions. The different themes and aspects connected with prostaglandins are divided and treated in six different chapters entitled Prostaglandins in Inflammation; Cellular Events in Inflammation; Mechanism of Anti-Inflammatory Drugs; General Aspects of Inflammation; Immunological Aspects of Inflammation and Current Research Trends in Chronic Inflammation respectively. Being a highly technical treatise on recent medical findings it may be of very great value only to those who are interested in Bio-medical and Bio-chemical problems. Cellular mobilization and œdema formation are ably described and discussed in Chapter 3. This book will be an useful addition to the Consultant's libraries.

T. N. S. RAGHAVACHARI.

"Treatment in Clinical Practice"—(First Edition)—By D. P. GUPTA, M.D., M.R.C.P., F.R.C.P., F.I.C.S., F.C.C.P. and Dr. BRIG. M.P. GOEL, M.D., F.R.C.P. T.D.D., F.C.C.P., No. of Pp. 428. Published by: M/s. Mediscope, 27, Thanikachalam Chetty Road, T. Nagar, Madras-17.
[Price : Rs. 40/-

This well-known book on treatment in clinical practice by two experienced authors, gives in 18 chapters, a detailed description of the various diseases that human flesh is heir to, and the proper treatment for them with the techniques to be employed in the special procedures to be used. Meant for the armed forces particularly the treatment methods outlined may be useful also in civilian practice. T. N. S. RAGHAVACHARI.

CORRESPONDENCE

To the Editor, ANTISEPTIC, Madras.

Query

Sir,

I would like to have your advice and suggestions regarding a case described below :—

An old man (age 75 years) was first examined by me about 10 years back. He then had Inguinal Hernia (LT)—Direct, along with mild hypertension which was well under control. He was then advised surgery for the hernia. He did not agree then.

He has now reported with a huge hernia left along with right sided hernia with hydrocele. He is also having typical symptoms of Benign Prostatic hypertrophy, *i.e.* frequency/urgency/dribbling of urine along with burning during micturition. He is also having mild asthmatic attacks off and on. His B.P. is normal. There is no peripheral œdema. Jvp is not raised, No evidence of CHF. No cardiomegaly. There are occasional rales heard in the chest.

P/R examination confirms prostate enlargement. The following investigations have been done :—

(1) *Hb*-9gm%. (2) *Blood urea*—60 mg—repeat 50mg/100 ml. (3) *Urine*—Alb + Sugar—*nil*. Epithelial and pus cells seen Sp. gravity—1014. (4) urine sensitivity—sensitive to Mandelamine (5) ECG—Normal (6) Blood sugar within normal limits.

I would therefore like to know the following from you :—

(1) The line of treatment.

(2) If surgery can be advised now? If *yes*—sequence of surgery, *i.e.*, prostatectomy followed by repair of hernia or combined.

(3) Prognosis.

I hope you will give an early reply through the columns of your Journal.

58/60, Gwalior Road,
Balugunj, Agra, U.P.
4-8-1975

Dr. P.K. DUTTA,
B.Sc., M.B. B.S.,
M.A.G.S., (U.S.A.)

Answer

I would suggest the following for this, well presented problem.

In view of the high blood urea indicating some renal dysfunction as also urinary infection—both due to bladder neck obstruction, it is safe to first relieve the obstruction by suprapubic cystostomy under local infiltration anaesthesia. The renal function is bound to improve after this. If the hernias are completely reducible, the patient could certainly try wearing a truss as a permanent solution. On the other hand, if the patient finds it irksome or difficult to wear truss after a period of trial or if hernia on one or both sides is irreducible, or there are repeated histories of obstruction or strangulation, one may be forced to resort to surgery. In that case, I would suggest hernia repair and hydrocele operation under local, one side at a time at 4—6 weeks' intervals. The suprapubic drainage is in no way harmful for successful hernia repair. In view of the old age and chronic lung disease, surgery for prostatic enlargement could probably be avoided altogether. He could live almost normally with the permanent suprapubic catheter.

The ideal and safe course in the patient under question is suprapubic cystostomy under local and truss for the hernias with tapping of the hydrocele repeatedly, if too large.

40-B/4, Raja Annamalai
Road, Madras-600084
6-9-1975.

Dr. M. MOHAN RAO
M.S., F.I.C.S.,
M.Ch. (Plastic)

CORRIGENDUM

Re : Article entitled—"A Study of the Antibacterial spectum of Soframycin"—By Dr. S. Subramanian, Published in the May 1975 issue of the "ANTISEPTIC" Page 223, 4th para.

The sensitivity discs were used in the following concentration, *Read* : "Penicillin (12 IU); Tetracycline (30 mcg); Streptomycin (10 mcg); Chlorampenicol (30 mcg); Kanamycin (30 mcg); Gentamycin (10 mcg); and Polymyxin (1000 units)".

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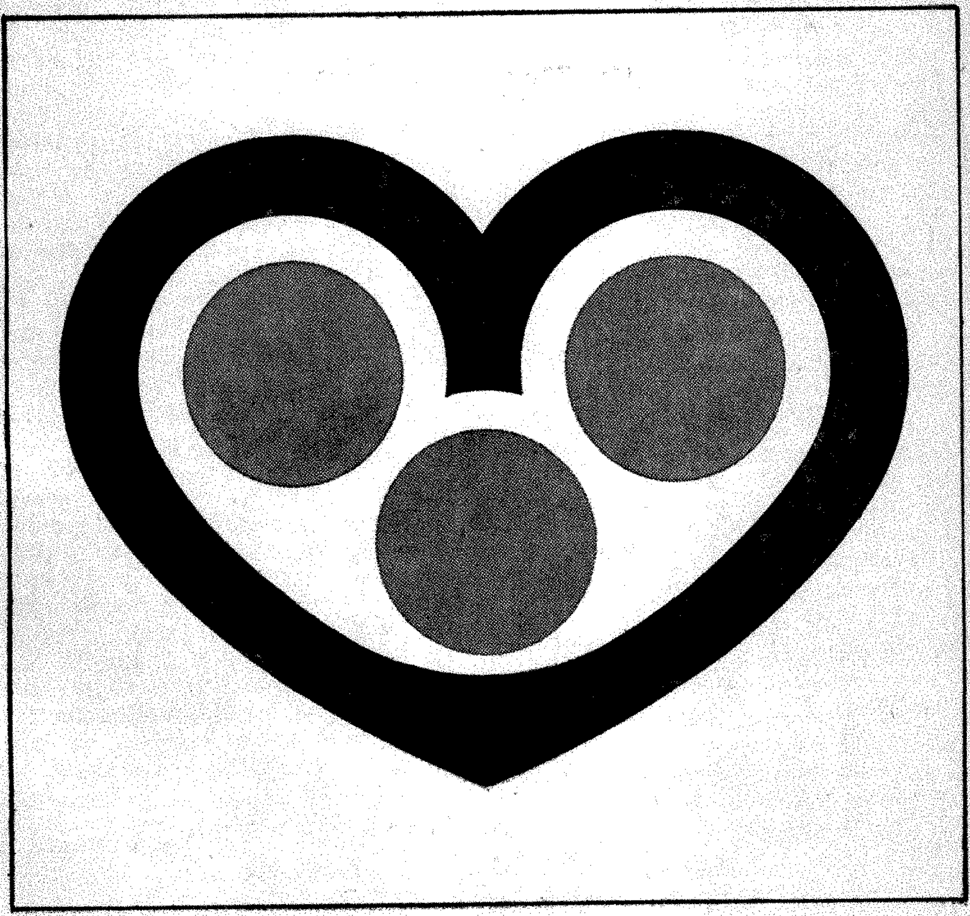

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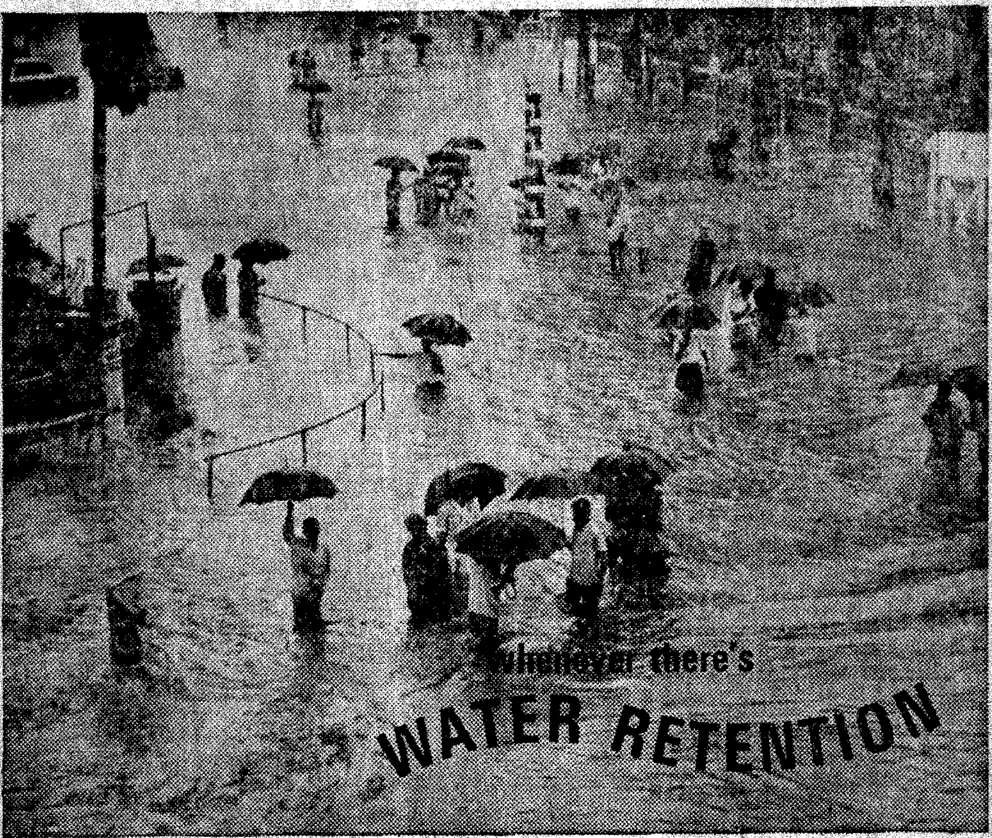

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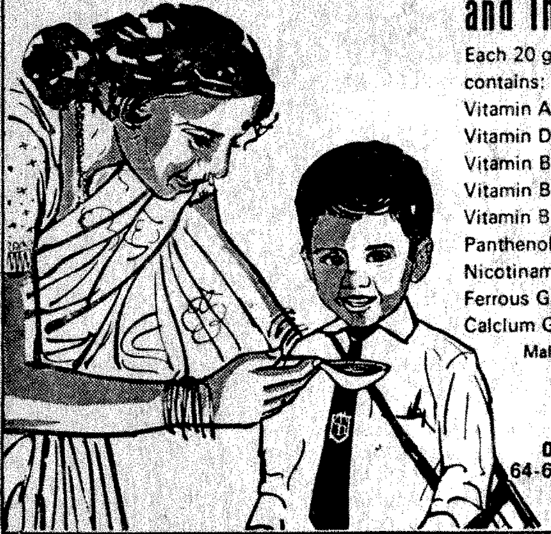

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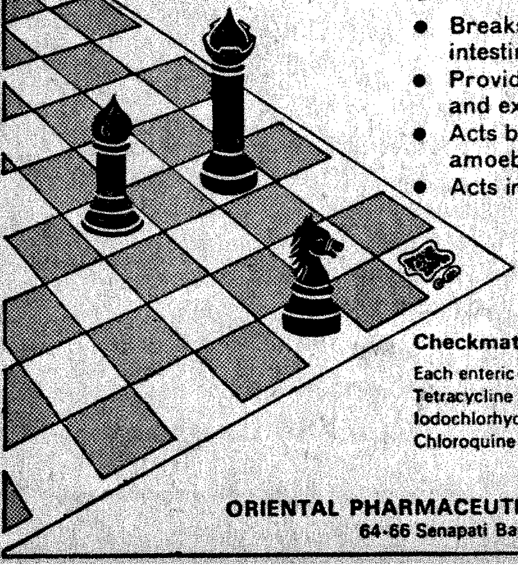

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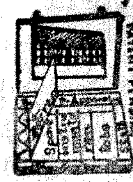

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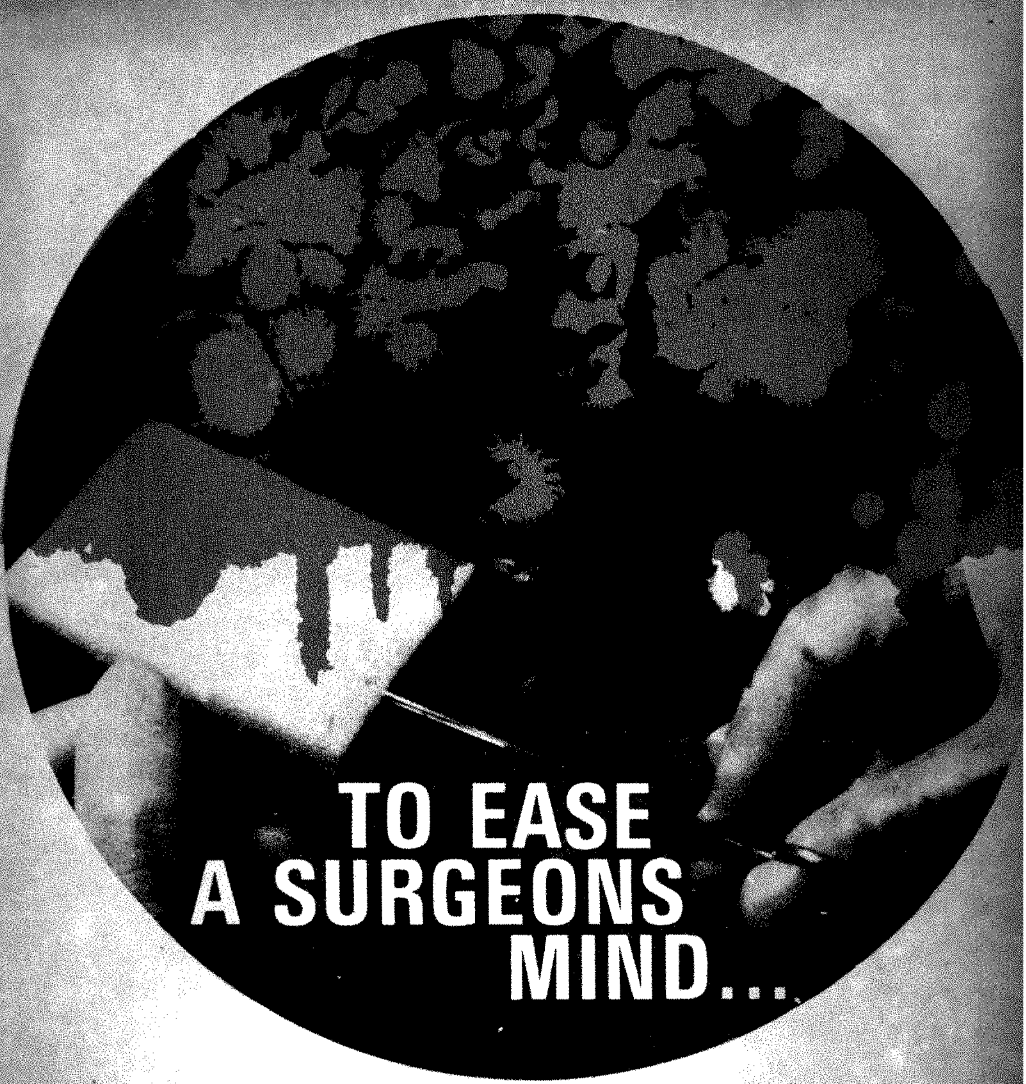

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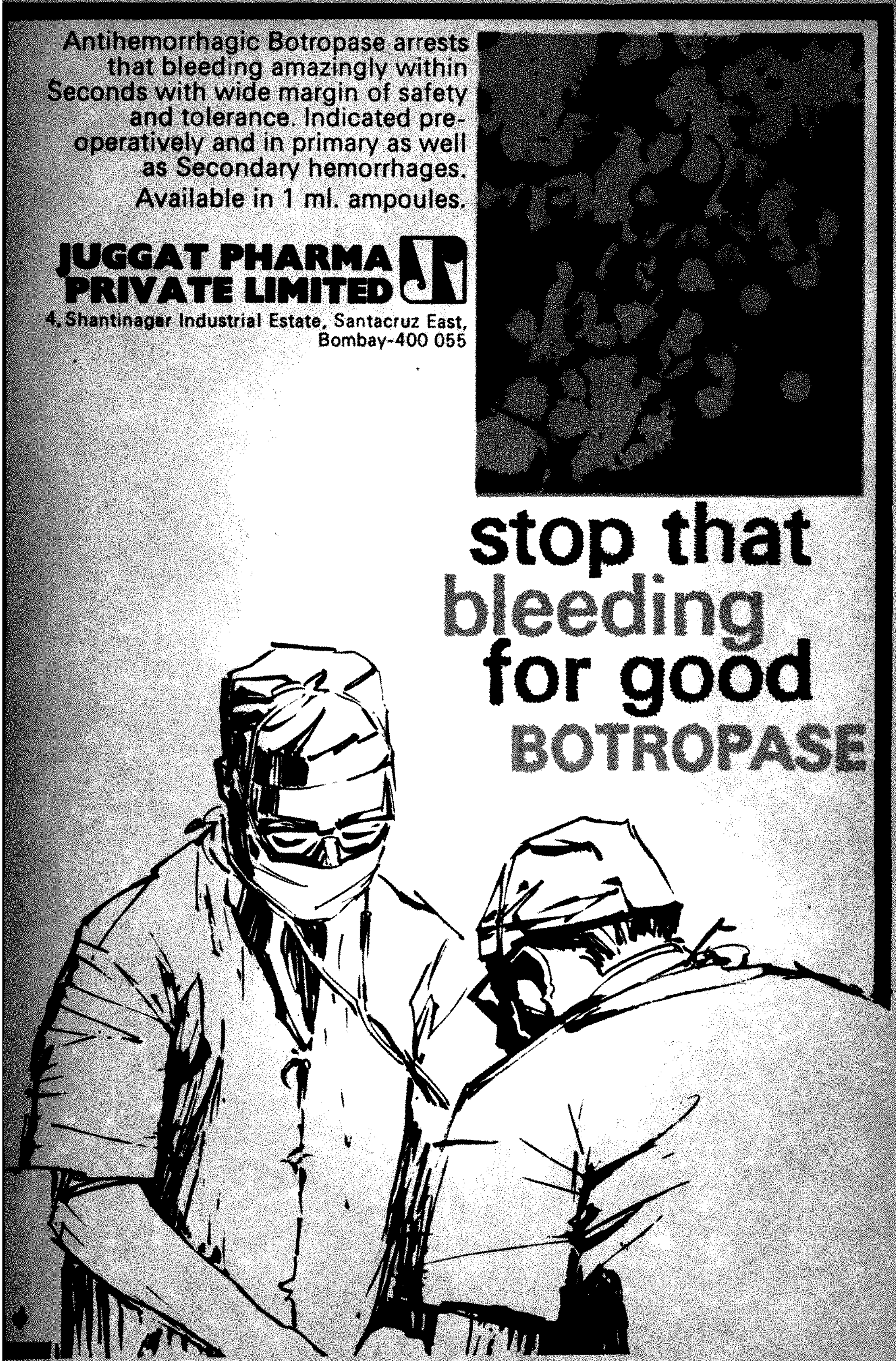

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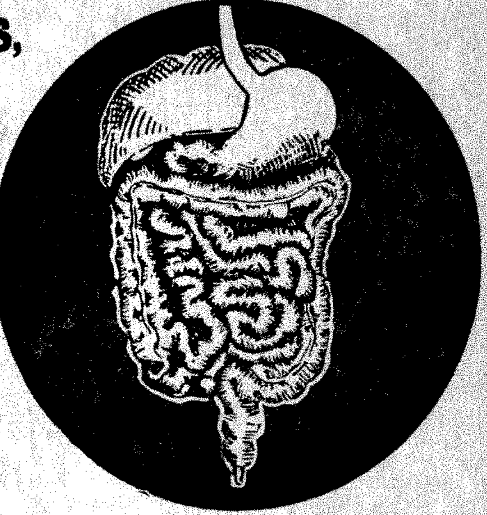

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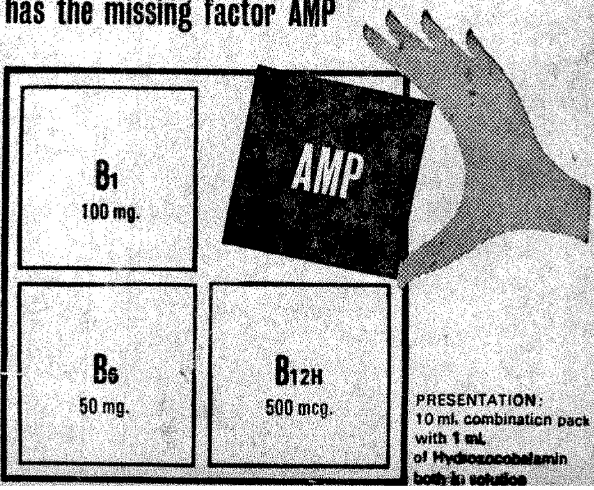

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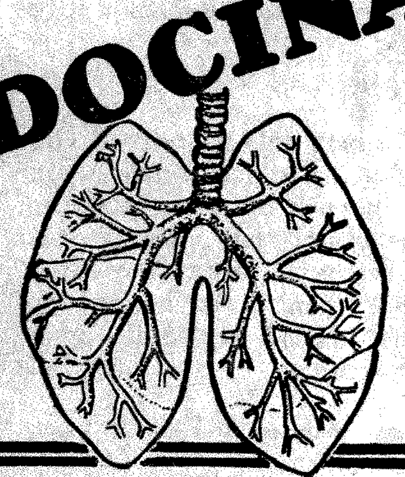

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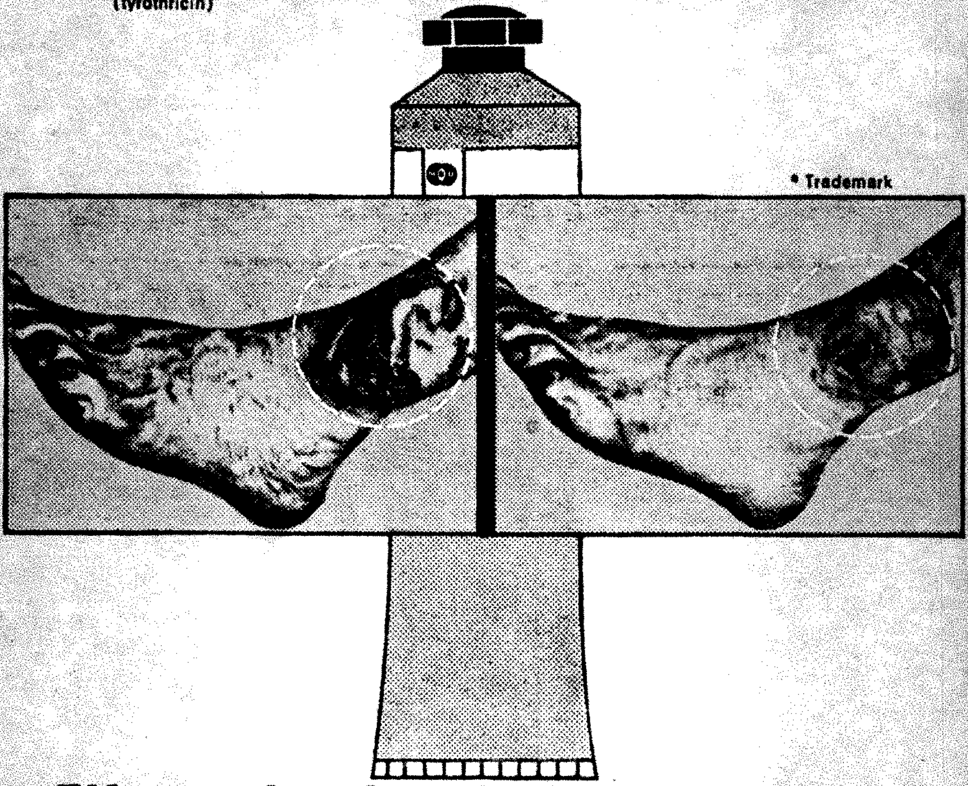

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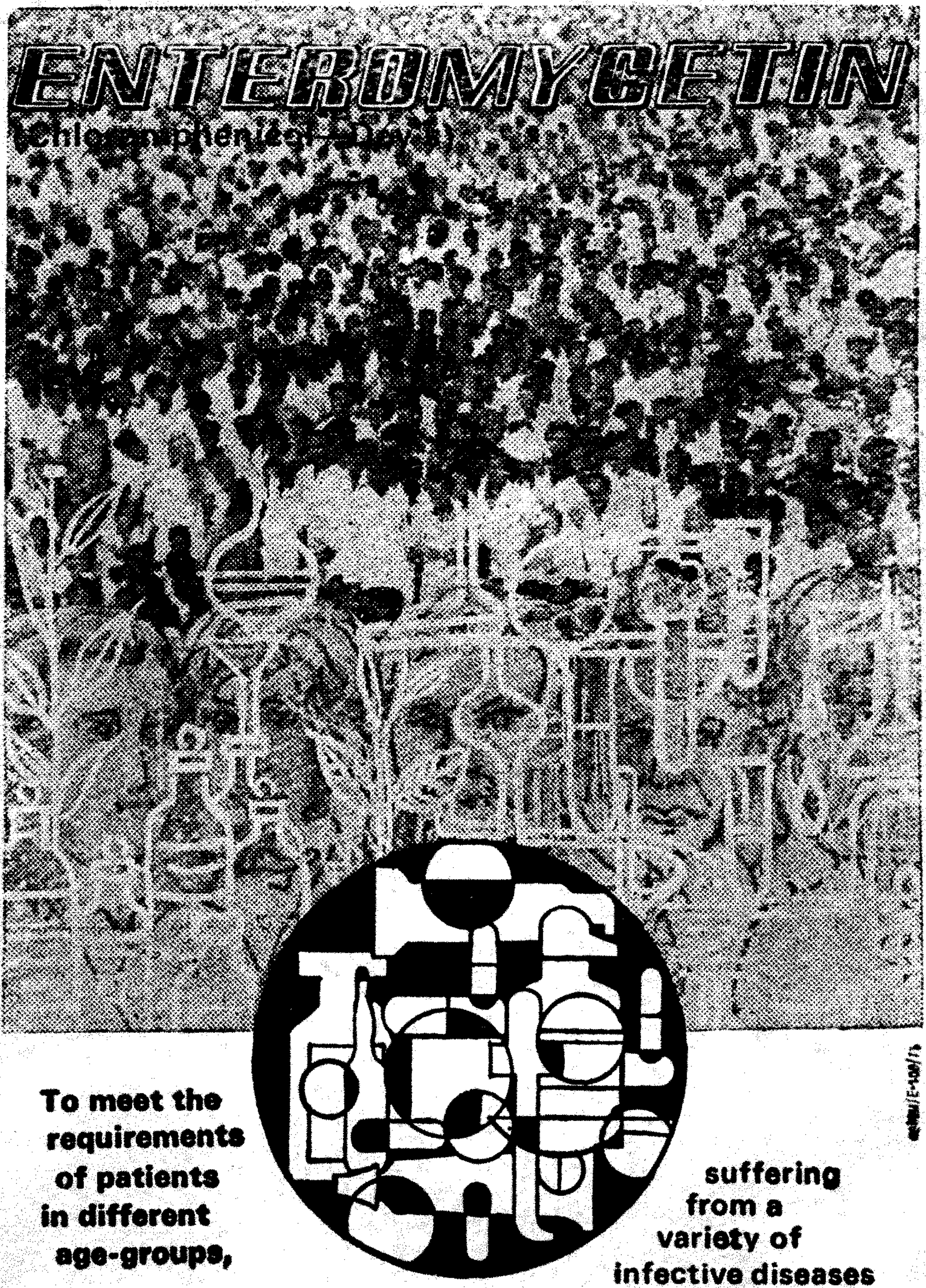

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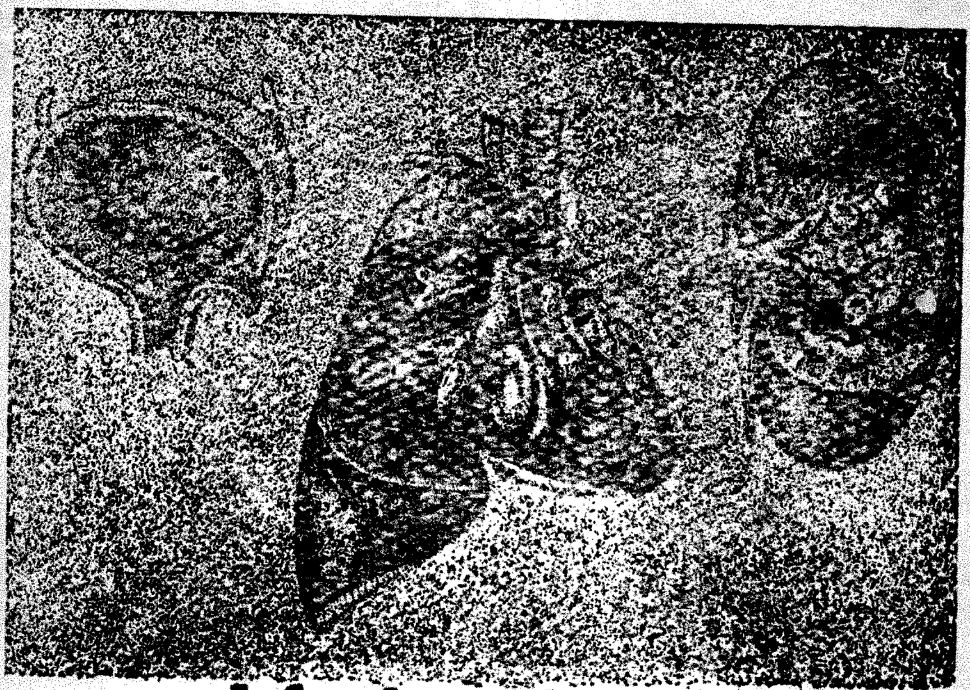

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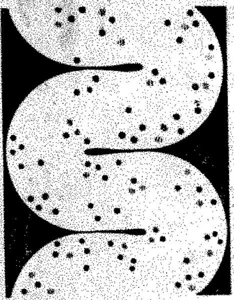

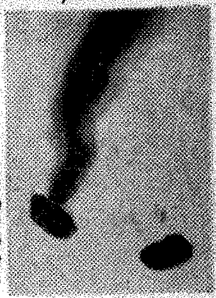

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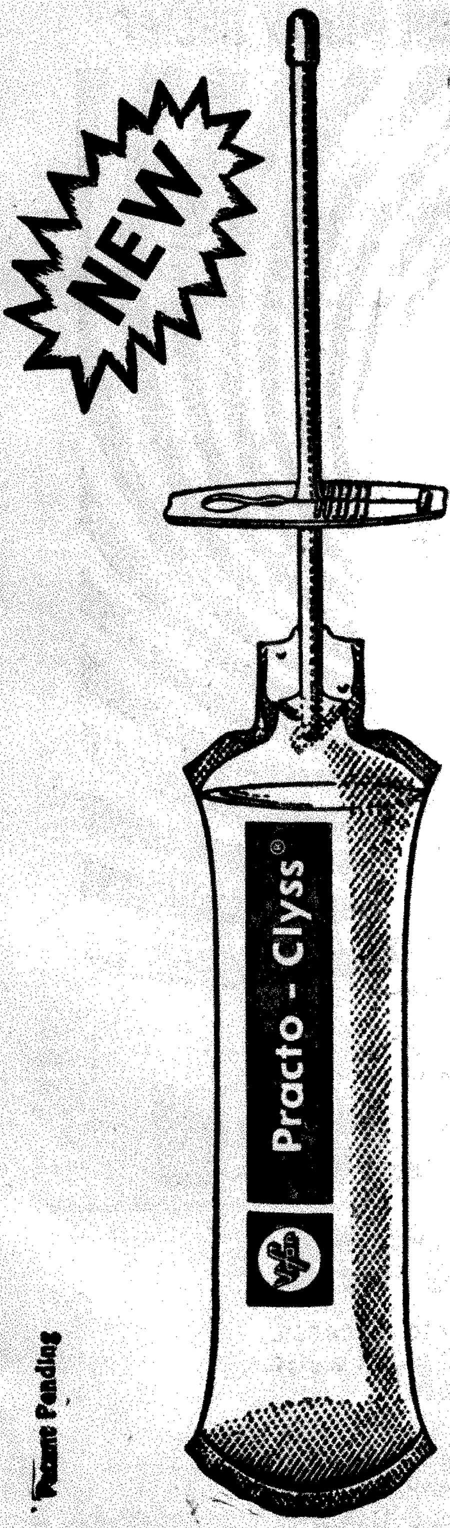

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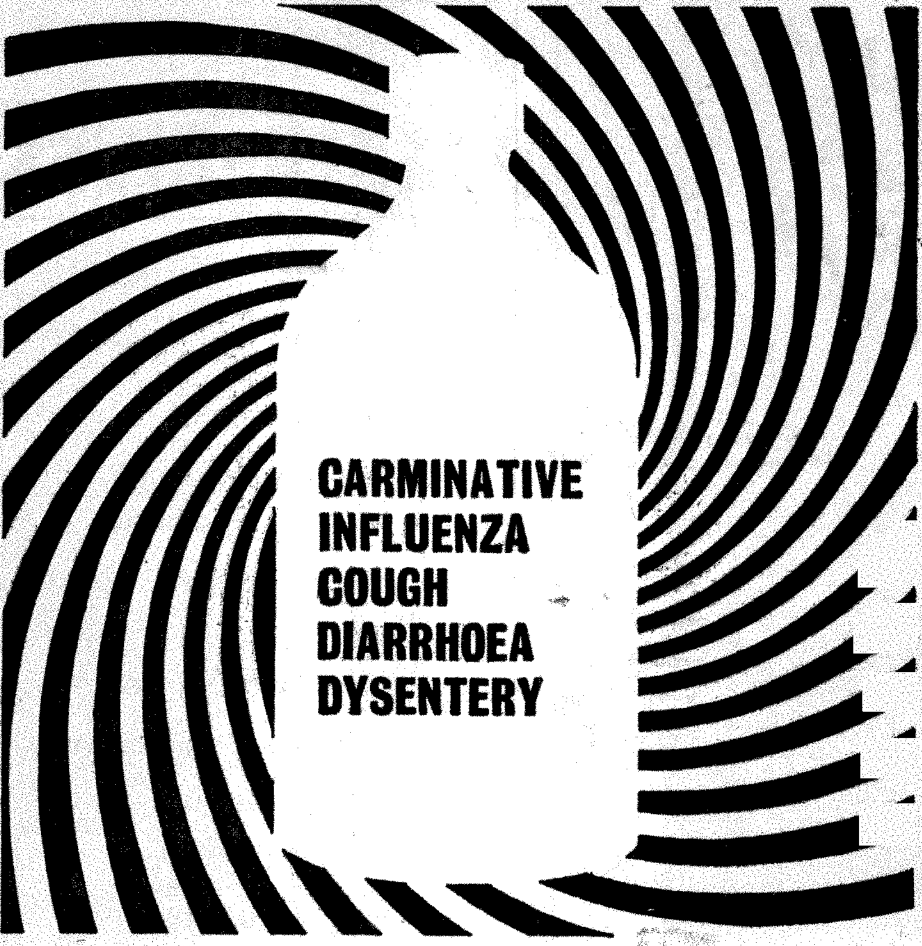

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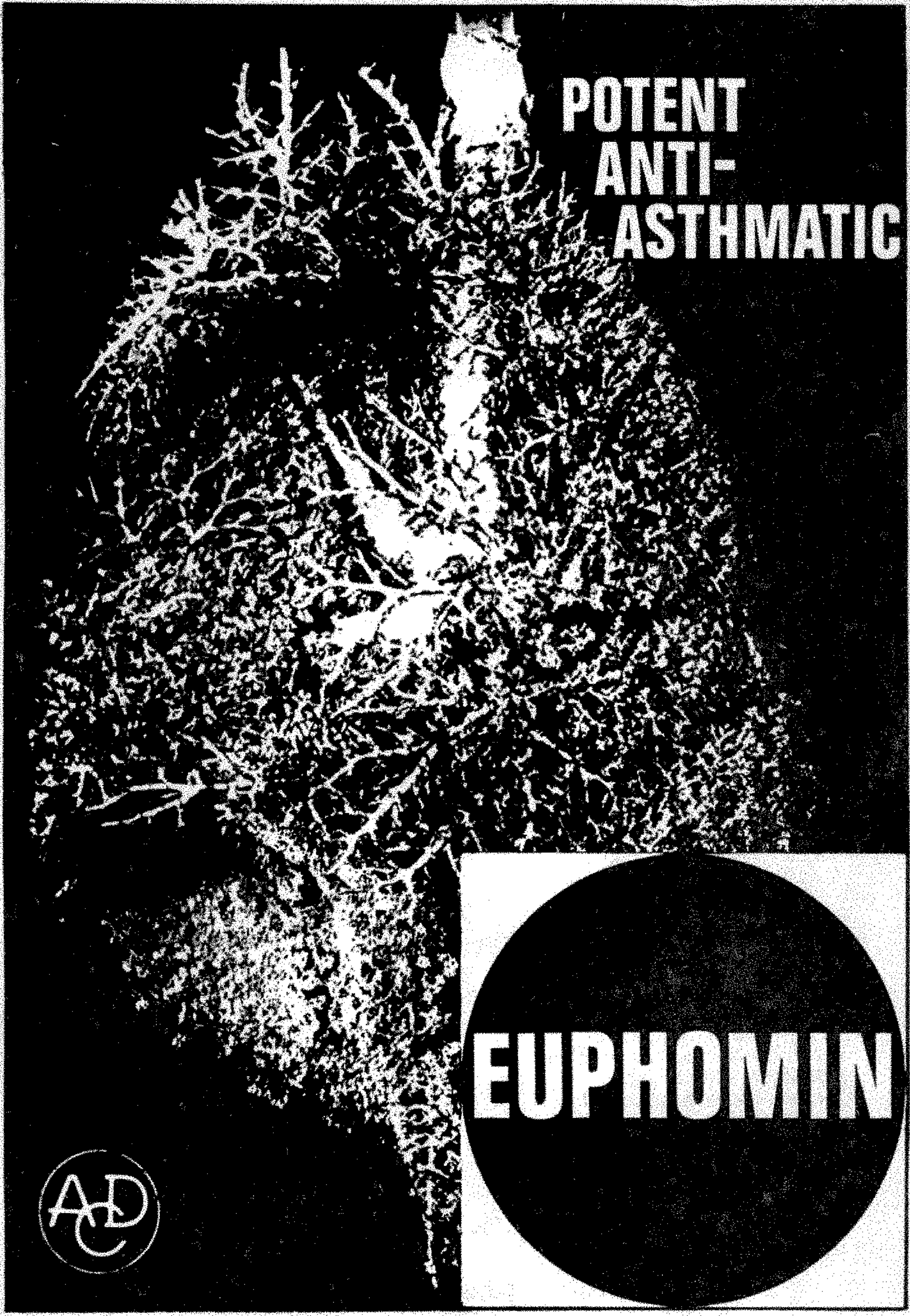

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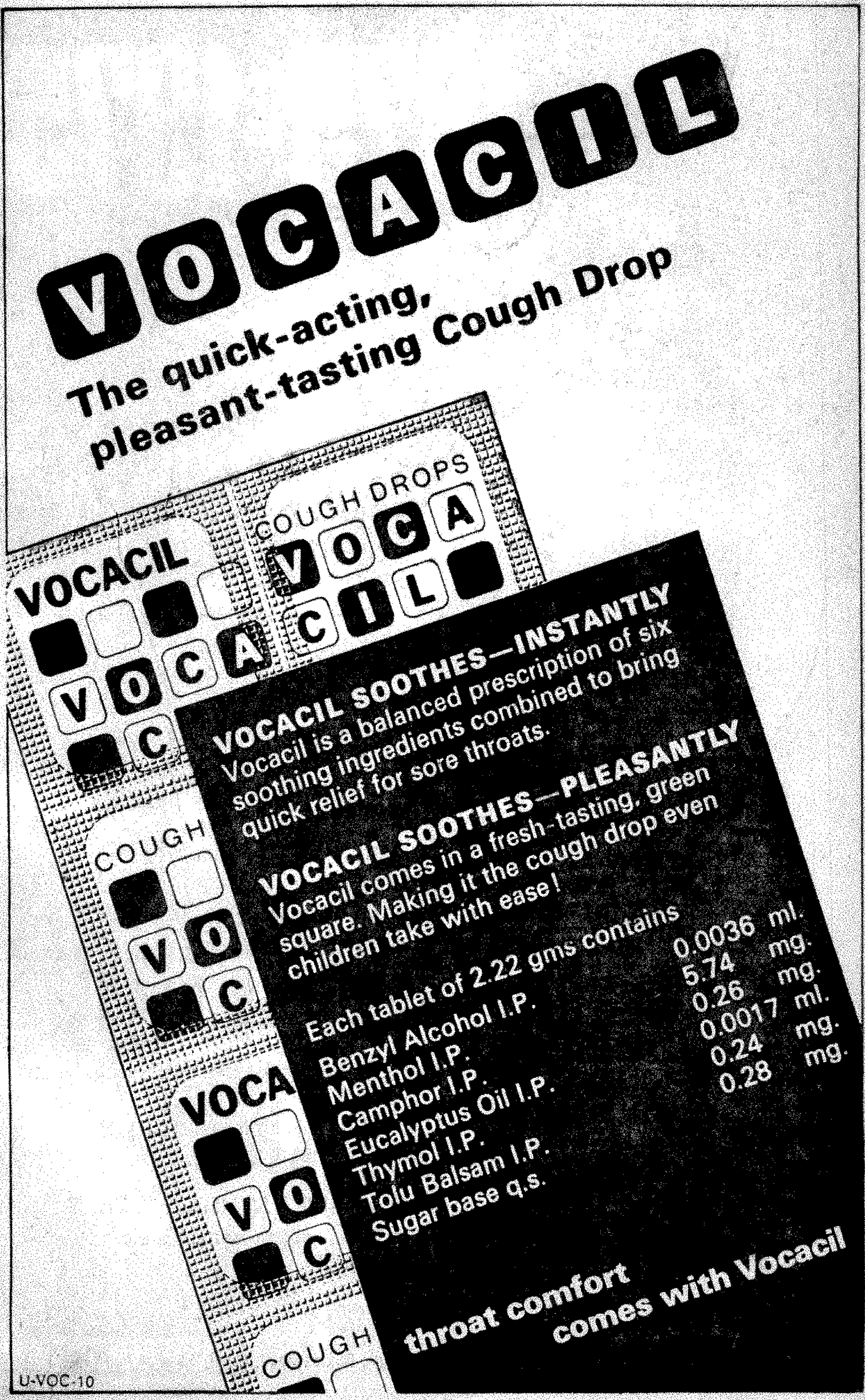

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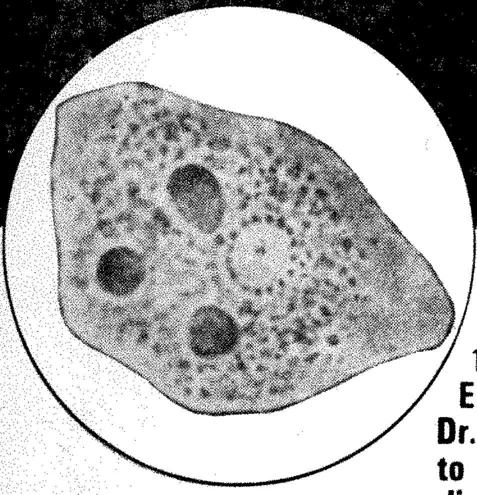

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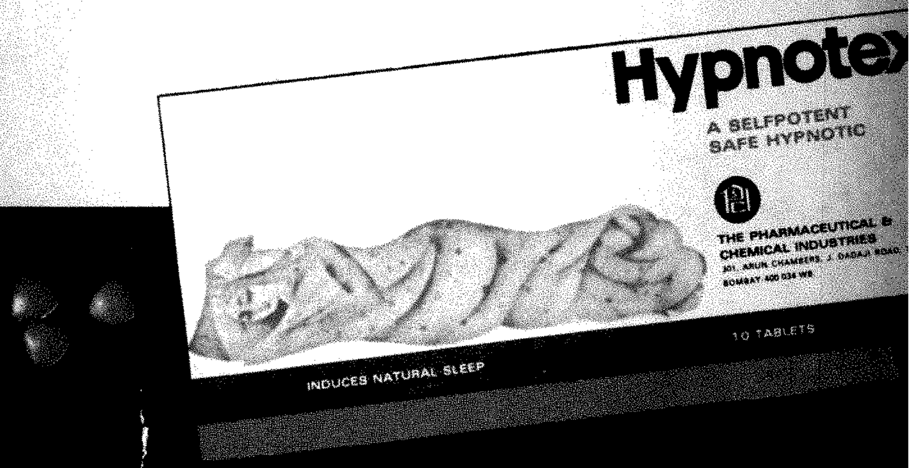

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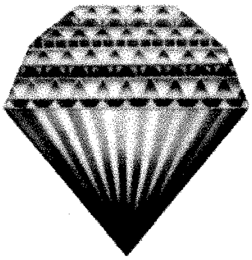

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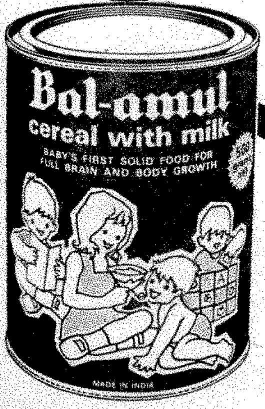

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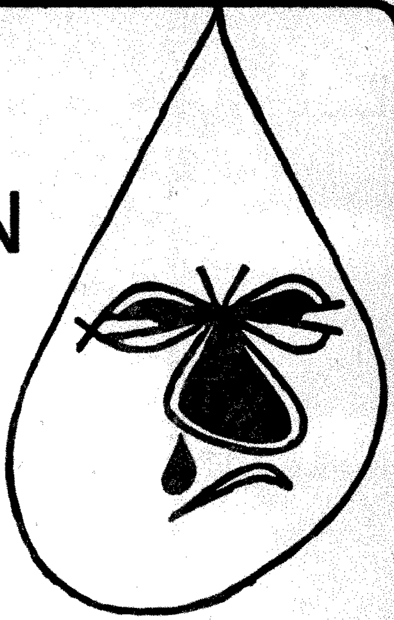

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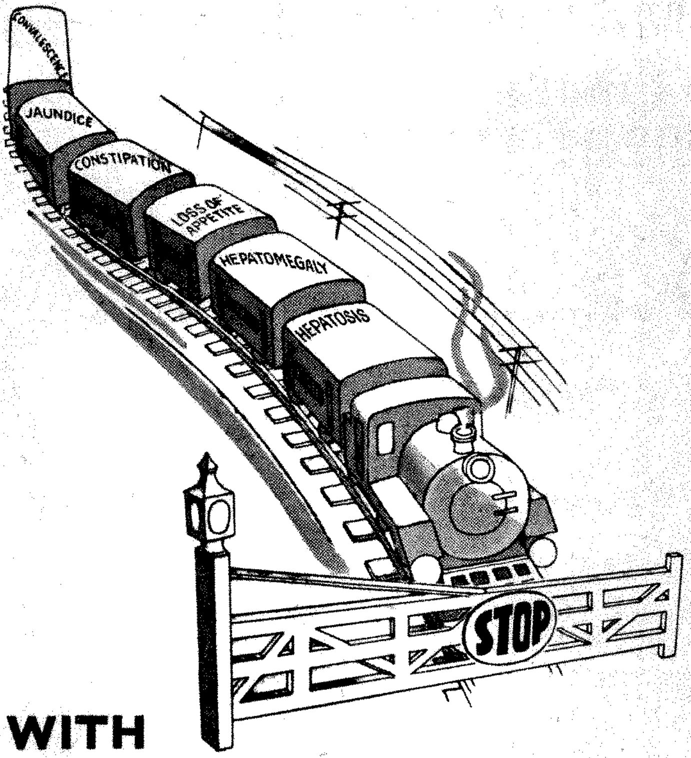

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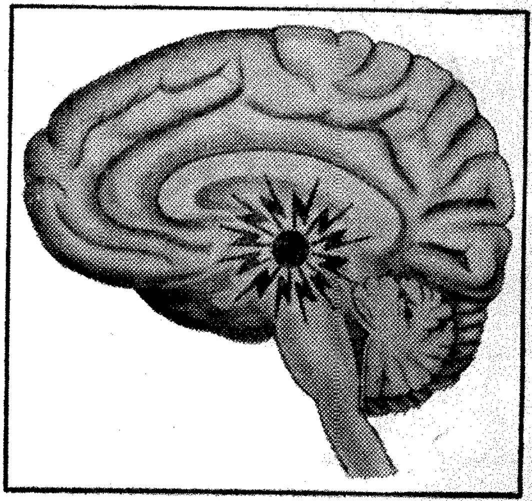

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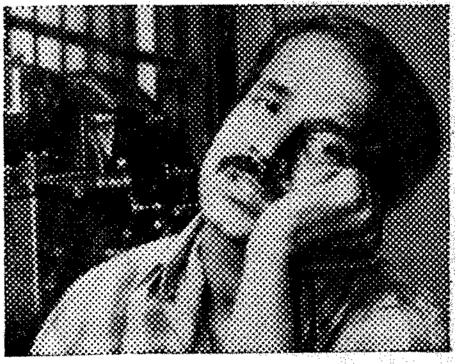

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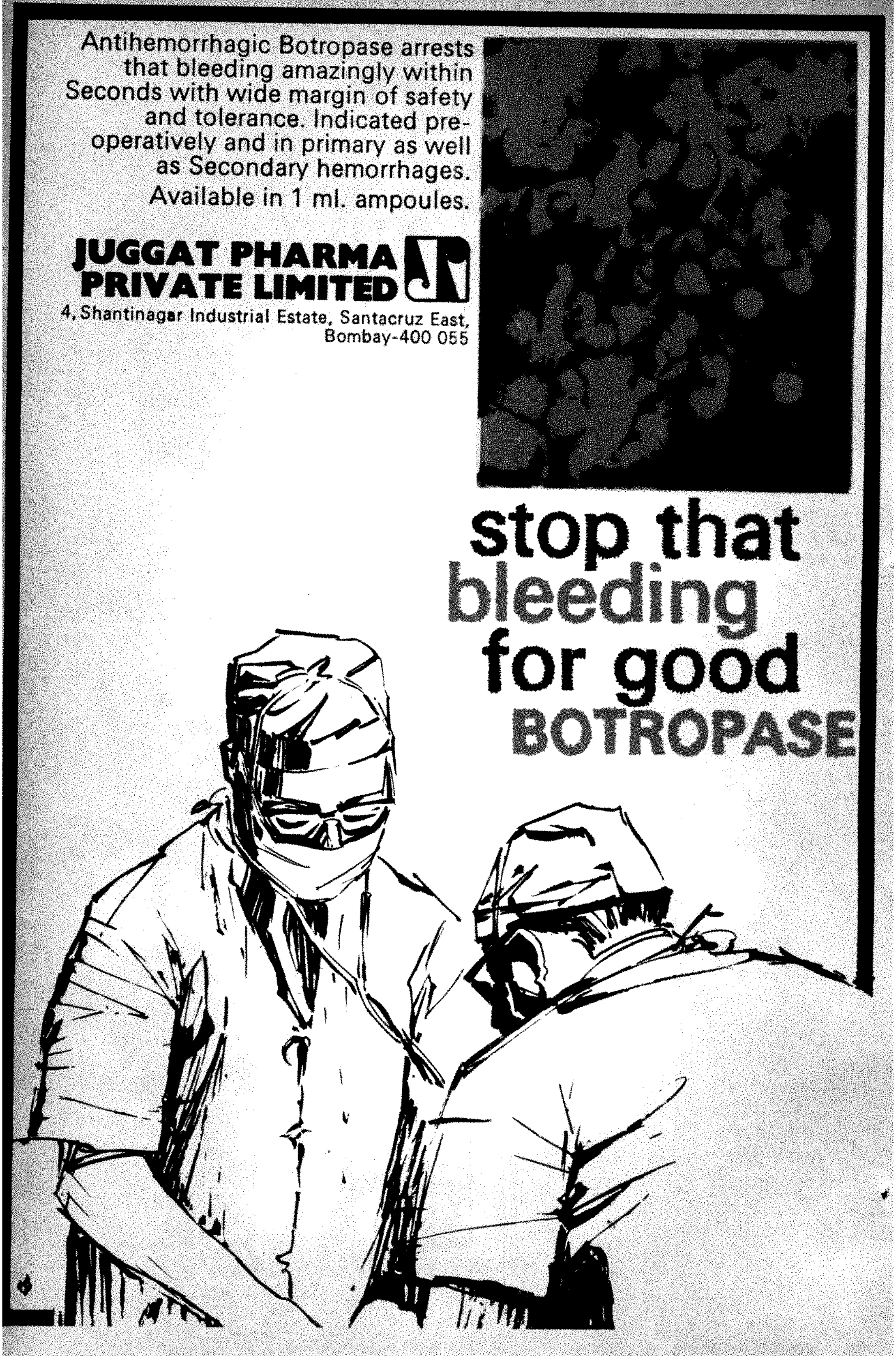

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Proc. 1st Asian Symp. on Gentamicin, Dec. 10, 1973.

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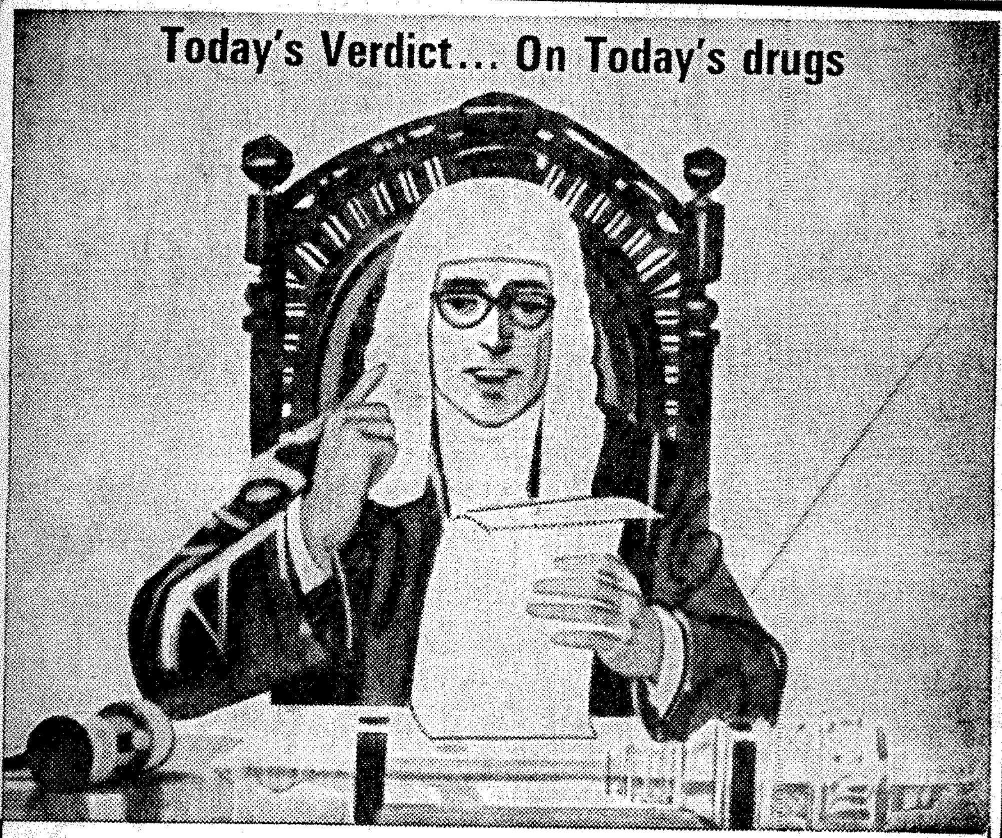
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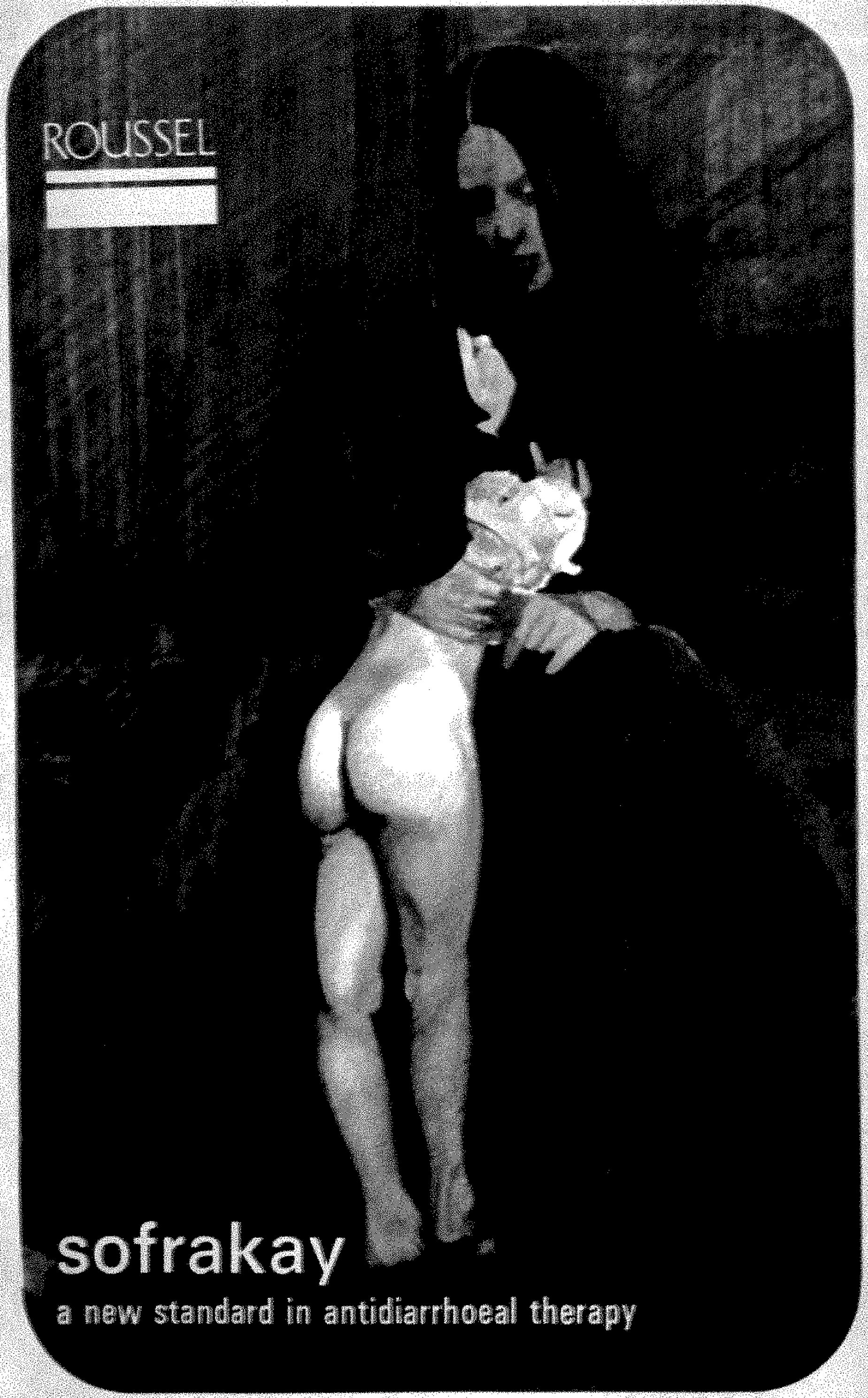
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The British Journal of Clinical Practice
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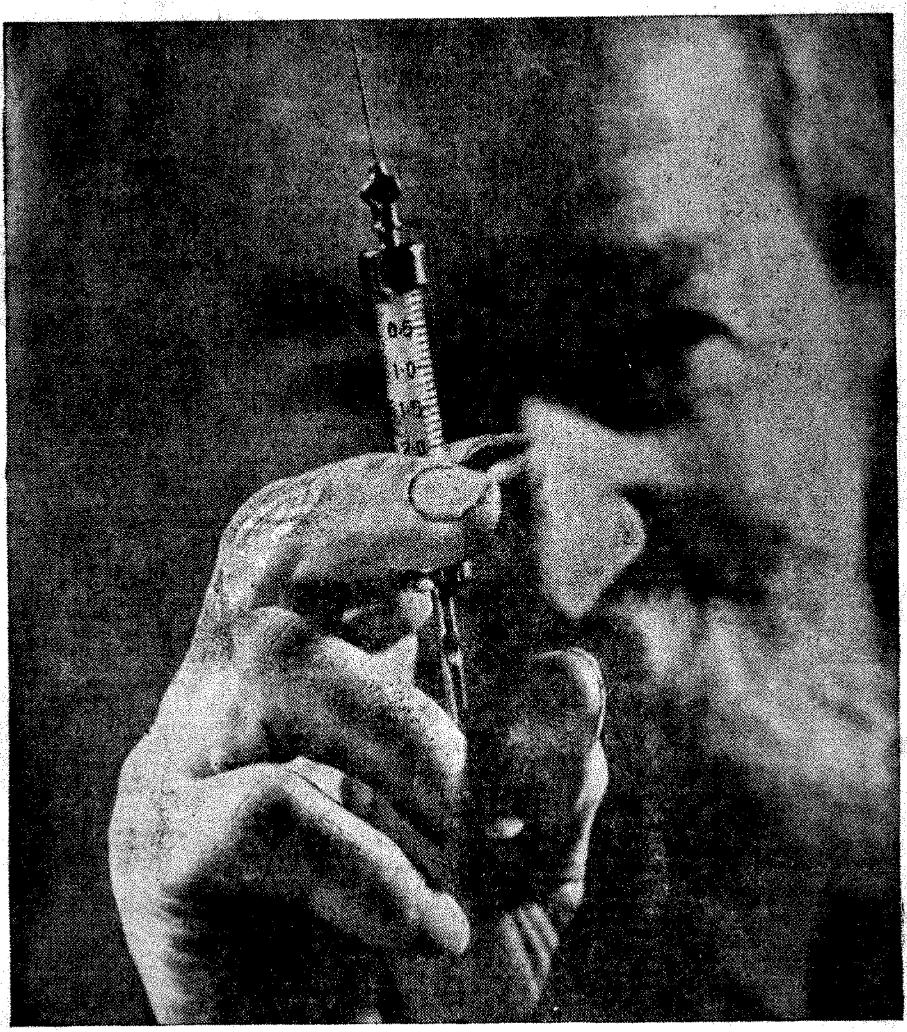

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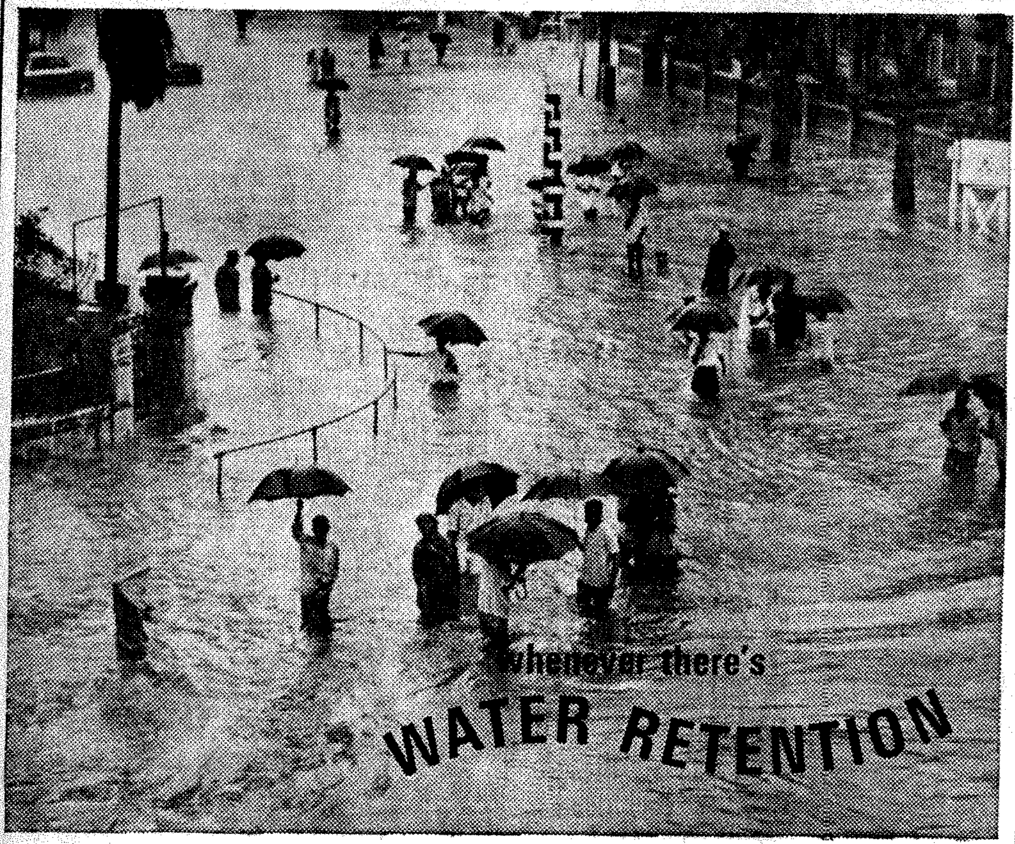

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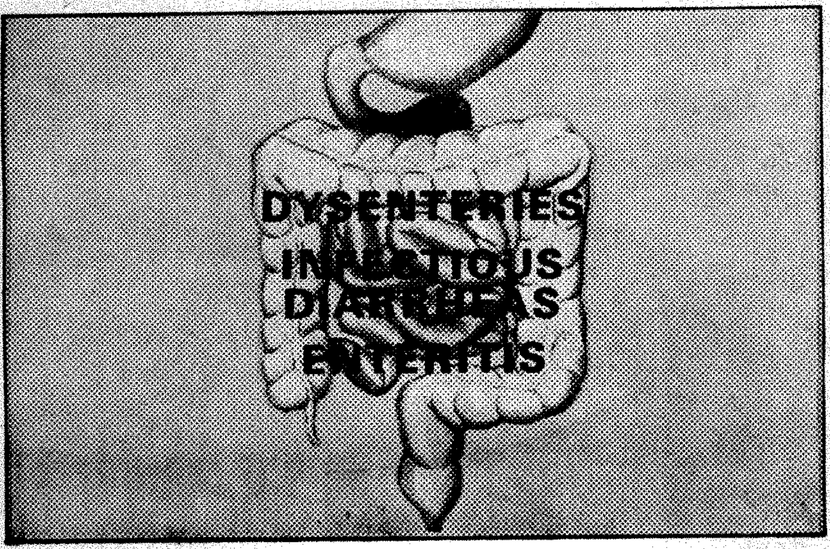

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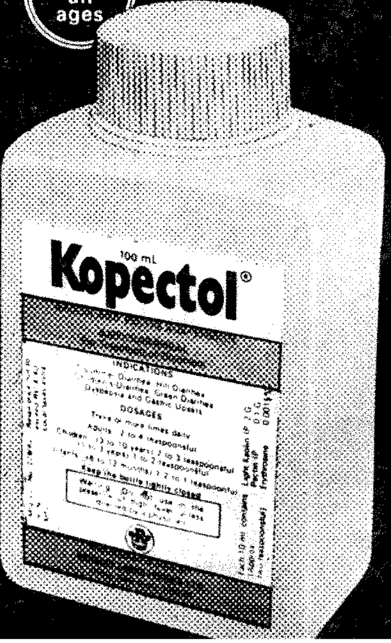

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Vol. 72 NOVEMBER, 1975 No. 11

Original Articles

ŒSOPHAGEAL CARCINOMA*

(Diagnosis and Treatment)

DHRUVA PRAKASH, M.S., F.R.C.S.,
Surgeon, Government General Hospital Madras-3

OESOPHAGEAL carcinoma is the third most common malignant tumour of the gastro-intestinal tract in South India, after mouth and stomach. It is a most disturbing tumour because it deprives the patient of the basic need and pleasure of eating food and even swallowing his own saliva. It reduces him to a pathetic figure, cachectic, dyspnœic and drooling saliva constantly. He shuns and is shunned by society. It is surprising how often patients put up with dysphagia for several weeks before reporting it to their doctor and even more surprising that the symptom is usually disregarded or the diagnosis not thought of.

Dysphagia or obstruction to the passage of food should be carefully differentiated from pain on swallowing (œsophagitis) by taking a careful history. True dysphagia is due to carcinoma of the œsophagus until otherwise proved. Proof is easily obtained by doing a barium swallow. Early diagnosis before gross cachexia sets in makes effective palliation by surgery possible.

Pathology.—Carcinoma of the œsophagus occurs usually between the ages of 40 and 70; it is commonest in the sixth decade. Males are affected more often (4 : 1) the females except in post-cricoid growths where females predominate (2 : 1). Various ætiological factors have been incriminated such as alcohol, smoking and long-standing peptic œsophagitis. Two pathological states deserve mention, because of the much higher incidence of carcinoma. Plummer-vinson syndrome, a combination of iron deficiency anæmia and muscular incoordination in deglutition occurring usually in women is often followed by post-cricoid carcinoma. Achalasia of the cardia is often followed after 15 to 25 years, by carcinoma of the upper dilated portion of the œsophagus, sometimes even after a successful Heller's operation for the achalasia.

---

*Specially contributed to the 'ANTISEPTIC'.

Types.—(1) *Squamous cell* (*epidermoid*) *carcinoma* :—This is the commonest variety (75%), arising from the oesophageal epithelium at any level of the œsophagus. It usually produces a short tight stricture.

(2) *Adenocarcinoma* :—(20%) is usually seen in the lower third of the œsophagus and arises from the cardiac end of stomach and spreads upwards into the œsophagus. Less commonly it may arise from the ectopic gastric mucosa in the œsophagus or the œsophageal mucus–glands.

Symptoms.—(1) *Dysphagia* :–is the earliest and predominent symptom. It implies a feeling of a lump obstructing the onward passage of food, usually located by the patient in the throat or behind the sternum. Dysphagia sets in when the tumour has already encircled the œsophagus. The dysphagia is for only solids at first but soon progresses to liquids as well. This progression from the earliest symptom of dysphagia to total dysphagia takes about 8 to 10 weeks.

(2) *Chest infection* :—This is due to the aspiration of food or saliva and often sets in before the dysphagia becomes total. As a rule, in any patient over the age of 40 having repeated lower respiratory infections, a history of dysphagia should be deliberately sought for. Later, the spill-over becomes excessive, the patient becomes severely dyspnœic and his general condition runs a rapidly downhill course.

(3) Pain in the midback is a late feature and often denotes involvement of cœliac or mediastinal lymph nodes, fixation to the pancreas or vertebral erosion.

(4) Hoarseness of voice due to infiltration of the recurrent laryngeal nerve in the upper third, carcinomas is a late feature.

Signs :—Clinical signs are remarkably absent till a late stage in the disease.

1. Supraclavicular lymph nodes may be palpable on either side in the late cases.

2. An epigastric mass may occasionally be palpable in growths of the cardiac end of the stomach extending up to the lower œsophagus.

3. The absence of crico-vertebral crackling. In cases of post-cricoid carcinoma, when the larynx is moved from side to side over the vertebrae, the normal crackling feel is absent.

4. The liver is rarely palpable and the liver function rarely altered though small multiple metastatic deposits are not infrequently found in the liver at operation.

5. Cachexia and dehydration are the outstanding features in cases reporting late after the onset of symptoms.

INVESTIGATIONS:—1. Barium swallow and screening is the first investigation to be made on every patient who complains of dysphagia. This is diagnostic in 90% of cases. The shouldering effect at the top end of the stricture is characteristic. The level and extent of the lesion are noted. A spike-like projection at the level of the growth may suggest an œsophago-tracheal fistula.

2. *Skiagram of the chest* P.A. view may be normal or may show evidence of aspiration pneumonitis in the classical location, in the apical segment of the lower lobe. Secondary deposits in the lung fields are very unusual.

3. Oesophagoscopy should be done in every case. The clinical suspicion and radiological diagnosis are confirmed on seeing the tumour. The upper extent of the growth and the mobility of the œsophagus are noted. A biopsy is taken for histopathological study.

4. Bronchoscopy is made in all cases of upper 1/3rd and upper middle 1/3rd growths in order to exclude a œsophago-tracheal fistula.

TREATMENT:—The aim of treating œsophageal carcinoma is to enable the patient to eat a fairly normal meal, to swallow his own saliva and to take his place in society as long as he lives. Unfortunately it is rarely possible to cure a patient (5 year survivals are about 20%) and it is not often possible to prolong his life.

The two standard methods of treatment are surgery and radiotherapy.

Growths in the middle and lower third of the oesophagus:—At these levels, surgery affords far greater palliation than radiotherapy. Therefore, if surgery is possible, it is the treatment of choice.

(a) *Resection—Anastamosis*:—This affords excellent palliation by the criteria mentioned above. But the average life expectancy in a good early resection is only about 28 months.

The cure rate is around 20% and the operative mortality is about 10%. Every patient who is fit to withstand major surgery should be given the benefit of a thoracolaparotomy with a view to resection. Surprisingly these thin, slightly dehydrated patients stand surgery better than the fat juicy ones. The presence of supraclavicular node metastasis, metastatic deposits in the liver or involvement of cœliac or mediastinal lymph nodes should not dissuade the surgeon from performing a palliative resection, if it is possible.

The most suitable—quickest, safest and easiest-organ to use for re-establishing continuity of the gastro-intestinal tract is the stomach. Occasionally the jejunum or colon may have to be used, as when the stomach is extensively involved by the cancer or where gastrectomy had been done earlier for other reasons.

(*b*) Bypass-operations. Where the growth itself is so adherent to the neighbouring vital structures as to make it unresectable, then a bypass of the obstructed œsophagus using a Poux-loop of the jejunum or colon, gives good palliation without prolonging the survival.

(*c*) Oesophageal intubation. A non-compressible tube may be placed in the œsophagus through the tumour to facilitate swallowing.

THE THREE TYPES OF TUBES USED ARE :—(*i*) *Souttar's tube* :—The advantage of this tube is that it can be placed through an œsophagoscope without having to do an operation. Its various disadvantages far outweigh its advantage and so it is now rarely used.

(*ii*) *Moussean barbin tube* :—This plastic tube has a funnel shaped upper end and is put in at a minor operation. It is no longer recommended because the plastic material is so hard that it sometimes erodes the tumour and neighbouring organs with disastrous results.

(*iii*) *Calestin tube* :—Is the latest addition to this family (1969). It is similar to the M. B. tube but its material is softer and less dangerous.

The palliation afforded by these tubes is not entirely satisfactory. It permits only semisolid food. It may get blocked with solid food requiring an oesophagoscopy to unblock it each time. The tube occassionally gets displaced upwards or downwards producing recurrence of dysphagia.

These tubes are used only in patients who are not fit to withstand any form of major surgery—with earlier diagnosis and modern methods pre-operative build-up of the patient—hydration, blood transfusion, parenteral nutrition, antibiotics, physiotherapy—less and less patients should fall into this category.

(*d*) Gastrostomy should rarely be done because it does not relieve the dysphagia and attendant problems, but adds the management of a gastrostomy and peptic skin corrosion to the patient's many problems.

Radiotherapy :—In cancers of the upper one third of the œsophagus, surgical excision involves a very major operation in the course of which total laryngectomy is usually required. Thus the misery of dysphagia is substituted by inability to speak. Besides, reasonable palliation is possible in such cases by irradiation. For these reasons radiotherapy is exclusively used in treating cancers at this site.

Radiotherapy used in conjuction with surgery (pre or post-operative) for growths lower down has shown no significant improvement in the survival figures but may add to the morbidity because of its side-effects.

Summary.—Carcinoma of the œsophagus is a common form of malignancy in South India. It reduces the patient to a miserably pitiable state. Early diagnosis requires a high index of suspicion. The aim of treatment is to restore the pleasure of swallowing. Palliation is possible in most cases. The quality of survival is more important than its duration.

MANAGEMENT OF RECURRENT HEAD AND NECK CANCER

The reappearance of a neoplasm following potentially curative therapy by radiation or surgery is conventionally described as a recurrence, whether it is residual tumour left after ineffective resection, regional metastasis, or regrowth at the initial site after radiotherapy. Some tumour areas in the head and neck carry a markedly better prognosis than others, so the overall recurrence rate will vary with the total experience of the surgeon as well as the distribution of the tumours he is treating. Despite the failure of the initial treatment, some patients can still be cured of their neoplasm; others can be effered only palliation of varying duration and effectiveness. This choice of this second line therapy and its successful accomplishment require considerable experience and adequate supporting facillities if the patient's sufferings are not to be increased. This must of necessity mean a degree of specialization, for such knowledge can be gained only by the care of large numbers of patients.

Inadequate surgical excision of the original tumour can rarely be rectified by a second operation. Radiotherapy has little to offer in the enhancement of cure rates in these patients but may have some palliative value, particularly the increasingly popular fast neutron therapy.

Williams has recently emphasized with varying salvage rates for recurrent tumours in differing sites of the head and neck, and though his personal series was small—144 patients treated in 6 years (about the number seen by most large centres in less than a year)—his conclusions were apt. Tumours arising in areas inaccessible to radical excision are rarely cured if they recur after initial therapy usually radiotherapy alone or in combination with an attempted radical excision. Nasopharngeal corcinoma and tumours of the middle ear, base of tongue, and paranasal sinus are examples of this problem. On the other hand, secondary total laryngectomy or the technically more demanding pharyngolaryngœsophagectomy yields a generous proportion of long term cures if carried out adequately and early in the recurrence—it is sometimes forgotten that there are degrees of recurrence and technical limitations to even the most enthusiastic surgeon's expertise. Extension to the skin and the need for its replacement require knowledge of the proper techniques of reconstruction for there are inherent difficulties in the application of standard plastic procedures to previously irradiated tissues.

The problems in carrying out salvage procedures for tumours recurring in the oral cavity, where radiotherapy is invariably used as the initial mode of treatment, have been discussed recently by Harrison. Adequate excision is often possible, though it is of limited value if unaccompanied by effective rehabilitation of swallowing. Total glossectomy is a formidable procedure, even for young patients, while replacement of the whole or part of the mandible may be impossible after radiotherapy and suggests a need for urgent reappraisal of the initial therapy in these tumours.

Recurrence rates always reflect not only the effectiveness of the initial treatment but the incidence at sites, such as upper jaw and middle ear, which carry a very poor prognosis, Undoubtedly a combination of well planned and carefully executed salvage surgery will result in the cure of some patients with recurrent disease arising at an advantageous site. Invariably the price to be paid will be high, not merely in money but, more important, in time and hardship. In the frail and the elderly this price may be too much. Perhaps a more rewarding approach would be better planned and executed primary treatment.—(Editorial, *Brit. Med. Jour.*, 12-4-1975).

DIET AND ATHEROSCLEROSIS

Diet and atherosclerosis are closely linked, both aetiologically and therapeutically. The aetiological association can be demonstrated most satisfactorily in animal experiments. In human beings the evidence must necessarily be more indirect and is largely based on dietary trials and epidemiological surveys linking the intake of cholesterol and saturated fat with morbidity and mortality from coronary disease. A modifying influence which has gained increasing recognition over recent years is the individual response to a given diet. This variability appears to be largely genetically determined, certainly in the defined primary hyperlipidaemic states, and possibly within the normal ranges of serum cholesterol levels. A change in food habits should be fully utilized therapeutically in any form of hyperlipidaemia, whether as a primary preventive measure before clinical diseases of atherosclerotic origin become manifest or in secondary prevention to delay further morbidity and mortality. With good dietary adherence, lipid levels may return to normal and there may be additional favourable effects on intravascular thrombosis.

Many problems remain to be solved on the public health issue of advising changes in the national diet. A number of countries in which an atherogenic diet it habitually eaten have decided in favour of such a recommendation. Public education, identification of persons at risk and provision of readily available skilled medical land dietary counselling should constitute a national health project with rewarding long term results.—(A. Jean Palmer, F.R.C.P., *The Medical Journal of Australia*, 26-1-1975).

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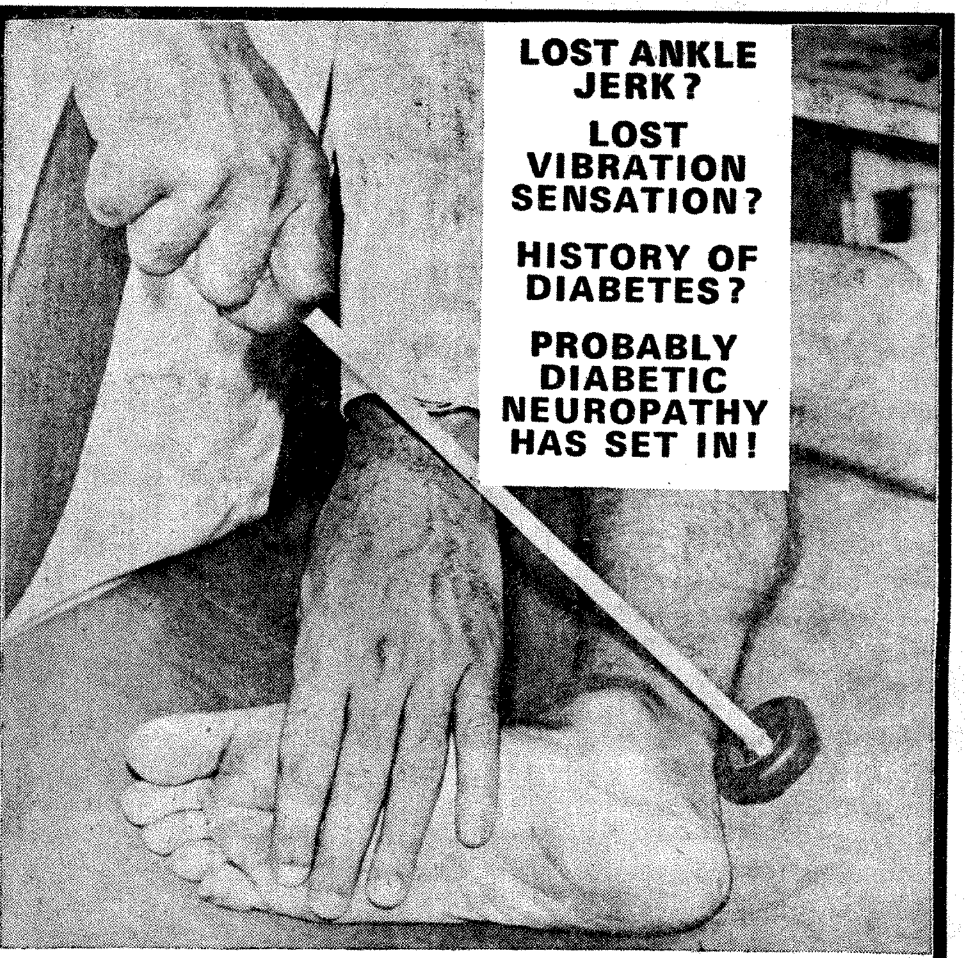
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MALABSORPTION SYNDROME*

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NEARLY all diseases of the alimentary tract in their ultimate stages are included in this syndrome. Strictly speaking, it should however, be limited to diseases of the absorptive area of the small intestines. Since the food consumed may not be digested properly due to defects in gastric function, absorption may become poor and the individual may suffer from this syndrome. Excessive peristaltic activity of the bowel may also produce a similar result. Clinically it includes a host of diseases. Pathologically it should include conditions associated with changes in the mucosa of the small intestines with a consequent loss of absorptive function. So the entities comprising this syndrome may become limited to a few conditions.

Malabsorption is a common state in tropical countries, where nutritional deficiencies exist, among the people. A vicious cycle sets in, one aggravating the other; malabsorption producing nutritional deficiency and *vice versa*. From the pathological standpoint, it conveys an impression that the mucous membrane of the small intestine has become structurally altered, and its selective function, as a permeable membrane gets blunted, resulting in poor absorption. Very many diseases may produce structural alterations in the mucous membrane, changes in the villi and in the lacteals rendering them inactive. Mucosal inflammation, atrophy, infiltration by foreign material, neoplasms may all produce this syndrome.

This syndrome may be reversible in its early stages, but with the onset of mucosal atrophy becomes almost irreversible. Various pathological changes take place in the villi, which limit its absorptive activity. Thickening or thinning of the mucous membrane, flattening of the villi, decrease in the number of folds and infiltration with chronic inflammatory cells, interfere with the mobility of the villi, limiting their absorptive function.

The changes occurring in the small intestine can be studied from a barium meal skiagram. Certain criteria have been mentioned, indicating the state of the bowel and the mucous membrane in malabsorption syndrome, *viz.*, puddling of the barium, segmentation of the gut, loss of outline of the mucosal folds can be observed in well-taken pictures, moulage pattern, in addition, mucosal biopsies can be performed and the exact pathology inferred. Very often the changes are of a non-specific nature.

Malabsorption syndrome is usually the result of chronic inflammation of the small bowel, which ultimately results in atrophy of the mucous membrane; the nature of the infection is non-specific. Such cases, often pass undiagnosed ætiologically; protein deficiency is another major factor causing malabsorption syndrome. It induces changes in the mucous membrane and in the epithelium, leading on to this syndrome. Such a condition is common in children, who suffer from chronic diarrhœa due to protein deficiency. The other features of protein malnutrition manifest only later. Protein deficiency affects every tissue in the body.

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*Specially contributed to the 'ANTISEPTIC'.

Many biochemical tests, to assess the degree of malabsorption have come into routine usage. Stool examination and estimation of fats is an important item in the battery of tests described. Fatty stools are a *sine que* non of malabsorption. Usually the major portion of the fat is absorbed by a healthy gut. Blood examination for the various constituents which are absorbed helps in finding out the functional capacity of the small intestines. Proteins, fats, and glucose in the blood are estimated. Xylose absorption has become a standard test. In addition, the estimation of calcium, iron, folates and vitamin B_{12} complete the various tests. Since fats are absorbed through two pathways; as suggested by Frazer (particulate hypothesis of fat absorption), estimation of the triglycerides in the blood is valuable, and chylomicron counts in the blood are made. These tests only help in finding out the function of the small gut, but the exact pathology should be inferred from the clinical examination, barium meal studies and general biopsies.

Indirectly absorption depends on proper digestion, motility of the gut and movement of the intestinal villi. Defective digestion due to lack of gastric juice, pancreatic diseases, improper bile flow, are all responsible sometimes for the malabsorption. Similarly excessive motility of the gut hastening the passage of food in the small intestines may also interfere with proper absorption. Sometimes proteins may be excreted through the gut in lymphangiectatic states of the bowel presenting a picture like the malabsorption syndrome-protein losing enteropathy, *i.e.*, weakness, wasting diarrhœa, and fluid collection in the body are the main features.

Poor gastric digestion is noted in achlorhydric states, gastrectomy syndrome, blind loop syndrome, gastrojejunostomy, etc. Pancreatic diseases associated with improper flow of pancreatic enzymes into the intestines, etc. interferes with the splitting of fats and diarrhœa may result.

Excessive peristalsis may be noted in nervous individuals, and in thyrotoxic states causing diarrhœa and resulting in a somatic disorder, in course of time.

Apart from these conditions, the small intestines may be the seat of an inherent defect which produces this syndrome characterised by steatorrhœa, creatorrhœa, weakness, emaciation, anæmia and œdema: Certain children or even adults develop fatty diarrhœa, on a wheat diet. Gluten and the related substance of gliadin which are proteins in wheat, are not digested properly due to deficiency of mucosal peptidase. Accumulation of gluten prevents absorption of fats and in course of time damages the surface absorptive epithelium of the intestines. Cœliac disease, and non-tropical sprue are examples of this disorder, which is inherited. There may be defect in the production of other mucosal enzymes, *viz.*, alkaline phosphatase, disaccharidases and peptide hydrolases.

Since the mucous membrane gets damaged in nontropical sprue, there may be a decreased, release of the Pancreaticotrophic hormones (Secretin and Cholecystokinin and Pancreazymin) which interfere with the pancreatic enzyme secretion.

Drugs may also temporarily interfere with the absorption of vitamins and other essential food factors. Continual intake of purgatives, laxatives, alkalies, liquid paraffin, antibiotics,etc. have been mentioned as some of the responsible agents. These, in course of time, may even damage the intestinal mucosa directly or indirectly, by allowing the growth of abnormal flora, inimical to the health of the bowel. Vitamin deficiency which is an inevitable result may aggravate the changes in the mucosa.

Among diseases associated with mucosal changes are the following:—Tropical sprue; infective enteritis; regional enteritis; chronic protein malnutrition; pernicious anæmia; tuberculosis of the bowels; giardiasis; amyloidosis; lymphomas and scleroderma.

Sprue syndrome was stated in the past to be a classical example of malabsorption syndrome. Even now, it is not clear, whether sprue is the result of an infection or is itself a deficiency disease. Folate and Vitamin B_{12} deficiency may lead to a similar syndrome. Sprue has therefore, become an unfamiliar diagnosis, since more specific disorders have come into prominence.

Certain endocrine diseases may induce malabsorption, as a result of digestive defects or to interference with bowel motility, such as is seen in Diabetes mellitus, hypothyroidism, hyperthyroidism and adrenal insufficiency.

It is not always that an individual with the malabsorption syndrome has the classical description pertaining to the stools passed, *viz.*, merely pale, foul, frothy, bulky semisolid stool. Sometimes such individuals are constipated or may pass a single stool, without any of the classical descriptive features mentioned. Such individuals may have only constitutional features like weight loss, weakness and mental torpor. So it may be very difficult to spot the condition in such persons.

The manifestations of malabsorption syndrome may vary with the degree of malabsorption. An individual may appear healthy, but yet may suffer from subjective disturbances of a general nature, *e.g.* weakness, lethargy, irritability, mental fatigue, etc. Bowel symptoms may be inconspicuous in the early stages, and may not be given much importance. There may be gaseous distention of the abdomen with rumbling and a single semisolid stool may be passed ; sometimes there may be post-prandial evacuation of the bowels. It is only later that large, pale frothy, foul smelling stools are passed.

Individuals with the malabsorption syndrome may waste considerably and may develop œdema later on due to hypoproteinæmia and anæmia. They become pale, listless, sometimes irritable and peevish. Features of severe anæmia may be noticed. Sometimes peripheral neurotic features or those of subacute combined degeneration may develop. Hypocalcæmic symptoms and hypothyroid features may also be noticed.

Skin manifestations are often conspicuous, *e.g.*, pigmentation of the cheeks and forehead, or sometimes even depigmentary changes may occur. Icthyotic skin changes are frequent. The hair also becomes dull and lustreless, brittle, discoloured and sparse all over the body. Thinning of the nails with changes in texture is a feature often noted. Anæmia of all the various grades and different types may occur. Bone changes occur very late in the disease and fractures may also occur due to brittleness and decalcification of the bones.

The detection of this syndrome is not difficult, but the identification of its ætiology is sometimes a problem. The different investigations, mentioned earlier may have to be performed. But still the ætiology is often obscure.

PINWORM INFESTATION AND URINARY TRACT INFECTION IN YOUNG GIRLS

Pinworms may be an important factor in urinary tract infection in young girls. Of 28 young female patients with urinary tract infection, 16 (57 per cent) had a positive early morning cellophane tape test for pinworms. Of 113 randomly selected controls of both sexes in the same age range, 6 were positive for pinworms : 3 boys and 3 girls. In another 50 randomly selected children tested on three successive days, 5 (10 per cent) had positive tests. If 10 per cent can be accepted as the true general incidence of pinworm infestation, then the 57 per cent figure in the group with urinary tract infection takes on significance.

Case material, test procedure, and results are reported by Richard D. Simon, M.D., in the American Journal of Diseases of Children 128 : 21 July, 1974.—(*New York State Journal of Medicine*, June, 1975).

ILEO-CAECAL TUBERCULOSIS*

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INTRODUCTION :—The propensity of the diagnostician to dub a case of non-specific pain in the abdomen into one of the realms of the common entities met with in his clinical practice more often like gastritis, peptic ulcer, etc., leads on to a consequent non-recognition of early cases of Koch's infection of the abdomen. It goes without saying that a strong suspicion of intestinal pathology due to *A.F B.*, should be entertained by every clinician practising abdominal medicine.

Ileocæcal tuberculosis is a common malady in our country. It may occur as primary intestinal tuberculosis or secondary to the pulmonary tuberculosis either healed or active.

Pathology.—The manifestations of Intestinal tuberculosis in the ileocæcal region are of four types :—

(1) Hypertrophic, (2) Ulcerative, (3) Combined hypertrophic and ulcerative and (4) Fibrous type.

1. *Hypertrophic or hyperplastic type* :—This type occurs commonly in the ileocæcal region, and is often confused with Crohn's disease which affects the same region.

The lesion is caused by the tubercle bacilli of low virulence, the amount of fibroblastic changes and lump formation varying inversely with the virulence of the bacilli. Fibrosis occurs in all the coats of the bowel-wall in a concentric manner, more marked in the cæcum than in the ascending colon and very slight in the ileum. As a result of fibrous thickening there is a narrowing of the bowel lumen and a longitudinal shortening—elevation of the cæcum and ascending colon towards the hepatic flexure making the ileocæcal angle obtuse.

Tubercles, whitish in colour, are seen scattered over the serous surface of the bowel. The mucous membrane of the cæcum and ascending colon are hypertrophied and papillamatous.

There may be associated ulcers in the mucous membrane-either primarily tuberculous ulcers or the result of ischæmia due to fibrosis of the lymph glands in the mesentery becoming enlarged.

Ileocæcal tuberculosis is quite often recognised as primary because the pulmonary tuberculosis is often absent. The incidence of associated pulmonary tuberculosis is reported to vary from 5 to 23 per cent.

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* Specially contributed to the 'Antiseptic'.

2. *Ulcerative type* :—This type of lesion is usually believed to be secondary to 'open cases' of exudative or caseating pulmonary tuberculosis. This is more common in adults, who have more lymphoid tissue in their intestines than in children. Tuberculous ulcers are usually found in the lower ileum and cæcum where the lymphoid tissue has a maximum distribution but no part of the intestine is immune.

Ulcers can be located on the serosal surface of the bowel by noting small whitish tubercles along the lymphatic vessels encircling the gut. Mesenteric lymph nodes are usually enlarged in this type also.

3. *The combined type* :—Here both ulceration of the mucosa and hypertrophy of the bowel wall are found to co-exist.

4. *Sclerotic or fibrous type* :—This term is coined, probably to describe the healing stage of girdle ulcers in the bowel, most commonly in the ileum. There is an increased thickening of the bowel wall due to the connective tissue leading to annular stricture with a narrowing of the lumen. The stricture may be single or multiple with secondary dilatation of the gut proximal to the stricture.

Pathophysiology :—The mode of infection of the intestine with tuberculosis is still in dispute. It may be either a blood-borne infection from a distant metastatic focus by direct contact of the intestinal mucosa with the tubercle bacilli which have been ingested. In the view of many surgeons it is mostly due to direct contact than a metastatic spread because more often primary tuberculosis is not observed in many patients elsewhere in the body.

Whether we miss the diagnosis or the lesions heal by the passage of time, we really do not know. It may also be that the incomplete treatment of a pulmonary lesion, attenuation of the virulence of the tubercle bacilli after treatment and natural immunity in most Indians, cause the disease to manifest itself as the hypertrophic type of ileocæcal tuberculosis. Swallowing the sputum has an important bearing on the causation of ileocæcal tuberculosis.

The human type of tubercle bacilli is more common that the bovine type.

The question is, why tuberculosis, though found to affect every part of the gastro-intestinal tract is found to a larger extent in the ileocæcal junction. The most probable explanation is as follows:—

The function of the foregut is secretory, the midgut-absorptive and the hind gut excretory. The absorbing capacity of the ileum is greater and added to this factor, an increased amount of the lymphoid tissue in this region may account for the high incidence of tuberculosis of the ileocæcal junction.

The lesions begin in the Payer's patch of the intestinal mucosa and go through the stages of tubercle formation, caseation ulceration and fibrosis. Infection spreads along the submucous lymphatics which encircle the gut and producing girdle ulcers. If the body-resistance is good and the virulence of the organism is mild the hypertrophic type of ileocæcal tubercle occurs; otherwise ulceration and stricture-formation occur.

Clinical features:—The non-specific symptoms of ileocæcal tuberculosis help little in diagnosis. Persistent low grade fever, loss of weight, loss of appetite and night sweats may be due to the co-existent pulmonary lesions. In hyperplastic ileocæcal tuberculosis, bowel obstruction is of the chronic intermittent variety with abdominal pain or cramps. Alternate constipation and diarrhœa is not a symptom pointing to the gastro-intestinal disorder. Advanced cases, present with obstruction palpable coils of the distended intestine; visible intestinal lymphadenitis, if present, will give definite evidence of the nature of the disease.

Differential diagnosis:—Amœbic grannuloma of the cæcum and ascending colon, self-reducing chronic intussusception and carcinoma of the cæcum constitute the important differential diagnosis in our country, Crohn's disease and ulcerative colitis are rare and should be thought of, after excluding the above mentioned lesions.

Complications:—Complications of ileocæcal tuberculosis will be: chronic ill-health, anæmia, sub-acute intestinal obstructions and malabsorption syndrome. Rare complications of the ulcerative type of tuberculosis will be perforation, fæcal fistula or hæmorrhage.

Investigations.—Investigating the case of ileocæcal tuberculosis should be of the type of confirming the diagnosis by hæmatological studies, E.S R., Mantoux test, plain skiagram of the abdomen (for calcified mesentetric lymph nodes), Barium meal, Barium enema, per-oral intestinal mucosal biopsy, motion culture for *A.F.B.*

Search for pulmonary tuberculosis should be made by sputum examination for *A.F.B.* and skiagram of the chest. Barium meal with follow through of the small intestine will show filling defect in the cæcum and ascending colon.

1. Obtuse ileocæcal angle.
2. Delay in emptying of ileocæcal angle up to 48 hours.
3. Non-filling of cæcum, ascending colon of hepatic flexure in follow-through studies. (SIERLIN'S SIGN)

Tuberculous ulcers in the ileum, are hardly made out radiologically.

The stricture type of ileocæcal tuberculosis will show multiple dilated loops of the small intestine with a narrowing in places and also stasis. Barium enema will show incompetent ileocæcal valve and sub-hepatic cæcum in the hyperplastic variety.

Inspite of all these investigations confirmatory evidence of ileocæcal tuberculosis will be provided only by the demonstration of tubercle bacilli in the diseased bowel and lymph nodes by histopathology, culture and guineapig inoculation.

Associated lesions with ileocaecal tuberculosis :—Very often we come across diseases like amœbiasis, chronic duodenal ulcer and cirrhosis of the liver, in association with ileocæcal tuberculosis. Tuberculous strictures may be found at a distal site in the large bowel also. A patient in our ward, a boy of 15 years, had multiple tuberculous strictures one in the cæcum and two in the transverse colon for which extended hemicolectomy was done. So a look for the possibility of associated diseases and tuberculosis of the bowel at a distal segment also, should be kept in mind.

TREATMENT :—The management of ileocæcal tuberculosis is by anti-tuberculous chemotherapy combined with resectional surgery.

At the time of exploratory laparotomy, the surgeon is confronted with the problem of differentiating the hyperplastic type of tuberculosis from Crohn's disease. Crohn's disease is said to be rare in our country, but cases with the dubious *mycobacterium tuberculosis* are not demonstrated by culture, and turn out to be cases of Crohn's disease.

Hyperplastic and combined type of ileocæcal tuberculosis are treated by right hemicolectomy, the limit of resection depending upon the extent of the disease which can be easily made out on the serosal surface of the bowel.

In the case of the stricture type of ileocæcal tuberculosis treatment depends upon the number of strictures and the distance between strictures.

A few strictures, closely placed are treated by primary resection and anastomosis. Multiple strictures placed at long distances are treated by the short circuit procedure.

Conclusion.—The introduction of strict sanitary and medical measures against the spread of tuberculosis might reduce the number of cases landing up in resectional surgery. In this context the importance of early recognition of these cases cannot be over emphasized. As in every other discipline of medicine, an awareness of the condition and a strong suspicion by the clinician would go a long way in the control of the disease.

We offer our grateful thanks to the Superintendent, Govt. General Hospital for permitting us to publish this article.

INTESTINAL AMŒBIASIS*

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INTESTINAL amœbiasis is the commonest of colonic disorders prevalent in our country and its incidence directly reflects the insanitary condition prevailing in a particular locality. The number of persons seeking medical attention do not form all the individuals harbouring the parasite. An equal number of persons ignore the symptoms because they are not severe enough to incapacitate them from work or cause any serious discomfort, and so do not get treated.

Epidemiology :—The disease has a wide geographical distribution occurring in all areas where unhygienic conditions are prevent particularly in the tropics. Transmission of *E. histolytica* from man to man is effected, by its encysted stage. The mode of spread is by contamination of water or food with fæcal material containing the cysts.

Food-handlers and house-flies play an important role in the transmission and spread of this disease.

Age and sex incidence :—Amœbiasis is quite common in children below 10 years of age but not in those below 5 years. The occurrence is much less in women than in men.

Sheila Sherlock-says that the *Entamoeba* often lives as a commensal in the guts of millions of people in the temperate climate also, but more often produces the pathogenicity in the tropical climates.

Life cycle :—*E. histolytica* passes its life cycle only in one host, *i.e.*, man. There are mainly two phases of development, trophozoites and cysts. The mature quadrinucleate—the infective forms are swallowed along with contaminated food and water. The cysts pass unaltered through the stomach and are digested by the action of trypsin in the intestine. Each cyst liberates a tetranucleate amœba which eventually forms eight amœbulæ, These invade the tissues and lodge in the submucous tissue of the large gut. During its growth, *E. histolytica* secretes a proteolytic ferment of the nature of histolysin which brings about the destruction and necrosis of tissues thereby helping the parasite in obtaining nourishment through absorption of these dissolved tissue juices. The parasites then produce strains which save the race from extinction. A certain number of the trophozoites are discharged into the lumen of the bowel which are transformed into cysts.

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* Specially contributed to the 'ANTISEPTIC'.

Pathology :—Amœbic ulcerations are more often localised in the ileocaecal region. The earliest lesion is characterised by the formation of scattered areas of small nodular elevations having an opening at the centre with hyperæmia and œdema of the margin. The intervening mucous membrane is healthy. The typical ulcer which is ragged and undermined, may extend to the muscular coat, filled with necrotic material yellow or black slough; The undermined edge gives rise to the typical flask shaped ulcer.

Microscopically the epithelial calls of the cysts of Lieberkuhn will show varying degrees of necrosis and with the destruction of the basement membrane, the amœbæ will be found to penetrate deeper. In the centre an area of necrosed tissue in which the cells are in various stages of degeneration will be seen. Towards the periphery amœbæ will be found in large number. Necrosis occurs at the base leading on to the separation of sloughs; as the slough separates they cause bleeding in the process of penetration; severe hæmorrhage may occur or blood circulation to the large bowel may be cut off leading to gangrene of a portion of the intestine. The gangrene may lead to perforation and peritonitis invariably to end fatally. Such lesions may progress producing marked scarring of the intestinal wall with thinning, dilatation and sacculation, extensive adhesions with the neighbouring viscera, localised thickening of the intestinal wall leading to a narrowing of the lumen of the bowel, generalized thickening of the bowel wall rendering it palpable or the formation of tumours like masses of granulation tissue—amœbic granuloma or amœboma.

Clinical features :—The onset is usually insidious, starting with diarrhœa and the passage of six to ten blood-stained mucous motions in the day. There is usually no pain, colic or tenesmus. There is no fever or toxæmia. The sequence of repeated attacks of dysentery interspersed with remissions is the common pattern of the disease.

More severe and sometimes fulminating and complicated cases of amœbic dysentery occur especially in association with malnutrition, debilitation and concurrent infections. The chronic amœbic dysentery patient may complain of loose motions after the ingestion of irritant and spiced foods. Complications of amœbic colitis are hepatitis and liver abscess, rarely bleeding piles, peritonitis, perforation, localized abscess formation and amœbic granuloma. Amœbic skin ulcers around the anus and colostomy wounds may form. Amœbiasis can also be an important but uncommon cause of cirrhosis of the liver.

A broad differentiation of the clinical signs between amœbic and bacillary dysenteries will help to establish the diagnosis of intestinal amœbiasis.

The stools in *amoebic dysentery* is relatively copious and having an offensive odour: blood and mucus will be mixed with the fæces and the number of motions per day will be from 6 to 8. There will be no fever or toxæmia and the pain is of a collicky nature, localised to the iliac fossæ and in the small of the back.

In *bacillary dysentery*, the stools will be small, odourless, with only blood and mucus, and no faecal matter and the number of motions per day will be 10 or more. The onset is sudden, sometimes with nausea and vomiting. The passage of the stools is urgent with tenesmus and severe griping abdominal pain, around the umbilicus. The patient will invariably have fever.

Diagnosis:—Repeated stool examinations should be made six times to rule out amœbiasis, Sigmoidscopic examination and swabs taken at the ulcer base may help in the diagnosis. A lubricated rubber catheter is passed up into the rectum for 6 to 8 inches from the anal margin and withdrawn; the mucus from the eye of the catheter examined for amœbæ will help to isolate the parasite when it was not seen earlier. Rectal examination may be made and the plug of mucus from the examining finger must be examined for amœbæ. Concentration methods are used and cultures are made in repeatedly negative cases.

TREATMENT:—Treatment should be aimed at relieving the symptoms, eradicating the pathogenic organism and replacing of fluids, electrolytes and blood loss if heavy. The first and foremost step in management should be to relieve the abdominal colic and reduce the frequency of the motions with suitable powerful intestinal anti-spasmodics like *Baralgan* (Hoechst), *Spasmindon* (Indon) or *Lomotil* (Searle). These antispasmodics as they paralyse the gut wall, also reduces the frequency of bowel movement to which may be added intestinal binders like Bismuth Pecto-Kaolin mixtures. Specific amœbic drugs are many but the two most potent would appear to us to be *Metronidazole* and *Emetine* alkaloids.

Metronidazole:—This is a recent amœbicidal drug available in the Indian market and usually prescribed in doses of 800 to 1200 mg in divided doses every day for an adult for a minimum of ten days. In our experience the lower dose appears to be better tolerated by our South Indian patients.

Emetine alkaloids:—Two derivatives of emetine are marketed one is the hydrochloride and the other Dehydroemetine. The latter is claimed to be less toxic to the myocardium though in our experience we have not met with any serious consequences from Emetine hydrochloride. It is given in doses of 30 to 60 mg. deep intramuscularly, daily for six days the dose depending on the body-weight of the patient.

Concurrently with amoebicidal drugs, it is usual to give an intestinal antiseptic, as the destruction of the bacteria in the gut will help to eradicate the amœbae faster. Though Tetracyclines are advocated for this purpose, a combination of Chloramphenicol and Streptomycin atleast for three to five days is recommended.

This combination of Metronidazole and Emetine with an intestinal antiseptic is best used in fulminating cases of patients with intestinal amœbiasis who may exhibit signs of toxæmia, dehydration and prostration. Such fulminating cases may also require rehydration by using adequate intravenous fluid therapy and electrolyte replacement.

Emetine and Metronidazole are tissue amœbicidal agents and can also act on all extra intestinal amœbic infections like those of the liver, lungs, etc.

Diet in amœbic dysentery should consist of bland, soft, frequent starchy foods, in small quantities. It should not be very hot or very cold (chilled). The extremes may induce gastro-colic reflexes. This kind of a bland diet, is preferably continued for a month before the patient reverts back to his normal diet, avoiding highly spiced meals and hot condiments so common in South India.

In chronic amœbiasis where there are no dominant symptoms like pain, loose motions and dehydration, a course of Metronidazole or Emetine may still be given followed by di-iodo hydroxiquine (650 mg. three times a day) for 2 days, followed by 250 to 500 mg. of Diloxanide furoate three times a day for ten days.

Di-hydroxiquine and Diloxinate furoate may be used as a follow-up regimen in acute (fulminating amœbic dysentery).

TREATMENT OF PAROXYSMAL ATRIAL FIBRILLATION

Q. What treatment is advisable for an elderly patient suffering from frequent attacks of paroxysmal atrial fibrillation—usually on getting up in the morning?

A. Treatment of paroxysmal atrial fibrillation is divided into two aspects: prevention, and control of the rate during any paroxysm that does develop. Prophylaxis can be achieved with either the beta adrenergic receptor blocking agents, such as propranolol, or else by quinidine bisulphate 250 mg (*Kinidin Durules*) given twice a day. To control the rate, and this is especially necessary, if Kinidin is used, simultaneous digoxin administration is necessary in a dosage of 0·25 mg. daily or less if the patient is of small stature. In some elderly patients, fibrillation does not occur at a very rapid rate, and in these patients proparanolol alone (10—20 mg *q.i.d.*) may suffice.—(*Brit. Med. Jour.*, 10-5.1975).

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ASCITES*

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ASCITES is a collection of fluid in the peritoneal cavity. Normally there is only a potential space between the visceral and parietal peritoneum-when this potential space is filled ascites is said to be present. Ascites may be loculated or generalised. It may be part of generalised oedematous state or a localised collection of fluid. The fluid may be a transudate or an exudate,

The causes of Ascites can be (1) Local or (2) General.

Local causes,—(*a*) *Infection :*—(*i*) *Bacterial*—Mycobacterium Tuberculosis, E. coli, Pneumococcous, Streptococcous, etc. (*ii*) *Fungal*—Candida, Histoplasma. (*iii*) *Parasitic*—Schistosomiasis, Enterobiasis. (*b*) *Chemical*—Bile, Blood. (*c*) *Neoplastic*—Secondary, Primary—Mesothelioma. (*d*) *Obstruction*—Lymphatic obstruction, Malignancy, Filarial (chylous Ascites). (*e*) *Miscellaneous*—Pancreatic, Myxœdema, Ovarian tumours.

General causes.—(*a*) *Hepatic*—Cirrhosis Liver, Budd-Chiari Portal vein obstruction, Venoocclusive disease. (*b*) *Renal*—Nephrotic syndrome, Glomerulonephritis. (*c*) *Cardiac*—Congestive cardiac failure, Constrictive Pericarditis. (*d*) Hypoproteinemia—Malnutrition, Protein losing enteropathy.

In cardiac causes of ascites the pathophysiological mechanism is an increase in the hydrostatic pressure in the portal capillaries with probably an added component of oozing of lymph from the hepatic capsule. In renal conditions and hypoproteinæmic states the reduction in the colloid osmotic pressure cause an outpouring of fluid from the vascular compartment to the extravascular space. In hepatic diseases there is a multiplicity of factors-portal hypertension, hypoalbuminaemia and reduced colloid osmotic pressure, oozing of lymph from hepatic capsule and changes in the Na and H_2O metabolism secondary to changes in intrarenal vascular flow, aldosterone metabolism and A.D.H. secretion. The role played by the peritoneum itself has not been studied well. In local causes of Ascites formation the accumulation is due to increased permeability of the peritoneal membrane.

The clinical features of Ascites are distension of the abdomen with fulness of the flanks, fluid thrill and shifting dullness. Only sizeable quantities of fluid in the peritoneal cavity can be detected by clinical examination. Putting the patient in the knee-elbow position and percussing the umbilical region for dullness ("puddle sign") helps to detect small quantities of fluid in the peritoneal cavity.

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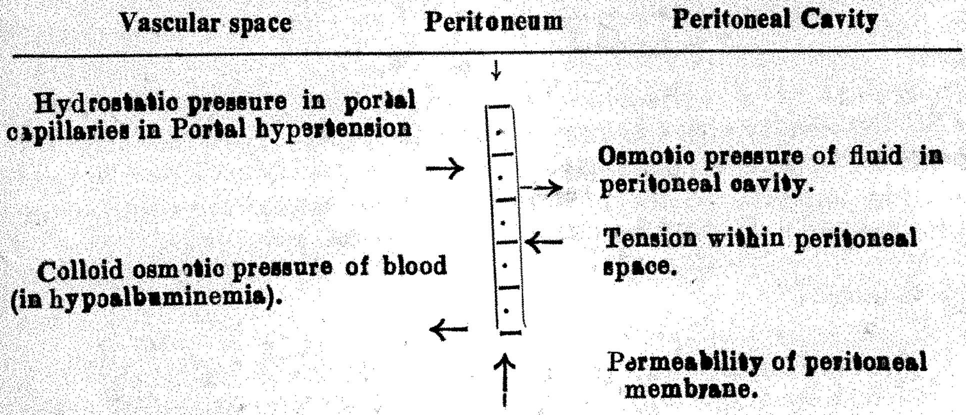
*Specially contributed to the 'ANTISEPTIC'.

Pathophysiology of Ascites formation


Vascular space
Peritoneum
Peritoneal Cavity
Hydrostatic pressure in portal capillaries in Portal hypertension
Osmotic pressure of fluid in peritoneal cavity.
Tension within peritoneal space.
Colloid osmotic pressure of blood (in hypoalbuminemia).
Permeability of peritoneal membrane.

Changes in Na and H_2O metabolism :

Increased ↑ A.D.H. Secretion
Decreased ↓ Aldosterone destruction
,, ↓ Natriuretic hormone
,, ↓ Renal Glomerular blood flow

} Retention of Na & H_2O

Hepatic lymph "weeping"

Increased ↑ Post Sinusoidal portal pressure.
↓
,, ↑ Lymph formation in liver
↓
,, ↑ Oozing of lymph from hepatic capsule into peritoneal space.

Ascites has to be distinguished from ovarian cysts and large cystic swellings in the abdomen. Often the diagnostic challenge, however is to arrive at the ætiological factor. The following diagnostic approach is suggested.

1. *History e g.* :—Dyspnœa on exertion, Chest pain—(Cardiac).
   Urinary symptoms, puffness of the face—(Renal).
   H/o alcoholism, Jaundice. G. I. bleeding—(Hepatic).
2. *Clinical examination* :—Signs of C.C.F., cardiomegaly gallops, murmurs.
   Constrictive, pericarditis—(Cardiac).
   Spider angioma palmar erythema gynæcomazia splenomegaly—(Hepatic).
   Masses-abdomen—(Local cause).
   Tenderness—(Local cause).
   Rectal examination—(Masses).

3. *Investigations* :—(*a*) Urine—Albumin, deposits. (*b*) Liver function tests—limited value except B. S. P. retention. (*c*) Serum Protein and A/G ratio. (*d*) X-ray Chest—Tuberculosis. Heart size, cardiac causes, Mediastinal mass—lymphoma. (*e*) E. C. G.—Myocardial infarction, other cardiac causes. (*f*) Diagnostic aspiration of ascitic fluid. Colour—hæmorrhagic —malignancy usually.

Protein> — 3 gms% — Exudate, Peritonitis - T. B., other Malignancy, Pancreatic Ascites.
<— 3 gms% Transudate Cirrhosis, Renal, Cardiac, Hypoprotenemia.

Amylase — Markedly raised in pancreatic ascites.

Cells — Malignant, Smear and Culture—Bacterial peritonitis.

(*g*) Peritoneal biopsy—Tuberculous, malignancy, (*h*) Lymph node biopsy/Liver biopsy—Tubercle, malignancy. (*i*) Peritoneoscopy, (*j*) Laparotomy.

TREATMENT :—Depends on the causes, *i.e.* Cardiac, renal, etc. In infection specific therapy can be used. In malignancy in view of the advanced stage, often anti-mitotic chemotherapy alone is possible.

In cirrhosis of the liver the most important point in treatment is limiting the salt intake to 0·5 gms/ day. Often failure of treatment is due to non-observance of this rule. The problem is to induce the patient to take a high protein diet in the presence of salt restriction. If with rest and salt restriction the ascites does not clear, diuretics are used. It is important to realise that it is not at all necessary to completely dry out the patient. Attempts to completely clear out the ascites may produce electrolyte disturbance and dehydration and make the patient miserable. The second point to remember is that the amount of fluid that can be removed from the peritoneal cavity per day is limited and in view of this attempts at inducing brisk diuresis only leads to dehydration of the patient without clearing the ascites completely. Spironolactone (Aldactone) an aldosterone antagonist is the drug of choice for initiating treatment. This is because it is a mild diuretic and a K^+ sparing diuretic and hence very useful in cirrhosis where invariably the patient is in Nagative K^+ balance. The main factor against it is its cost. 25 mgm tab four times daily is the usual initial dose and this can be further increased even upto 1000 mgm per day. When K sparing diuretics (Aldactone or Triamterene) are used it is inadvisable to use K supplements as there is a risk of producing hyperkalaemia. If with Aldactone alone the response is not satisfactory a more powerful diuretic can be added such as Thiazide, Frusemide or

Ethacrynic acid. Usually with this the ascites can be cleared. In those cases where the liver disease is still active steroids may help.

Tapping of the ascites is discouraged except for diagnostic purposes. The loss of proteins causes increasing hypoproteinemia if recurrent tapping is done. Only if there is respiratory embarrasement or a very tense ascites should tapping be done for therapeutic purposes Reinfusion of ascitic fluid intravenously has been attempted but the risk of inducing a septicæmia, if the fluid is infected, is great. In the West, machines are available to dialyse the ascitic fluid to remove the sodium so that a *Na* free filtrate can be reinfused intravenously. This is claimed to reduce the period of hospitalisation.

Various surgical procedures have been tried for the treatment of ascites in Cirrhosis Liver. Porto-caval shunt of the 'side to side' or 'double barrel' type is considered by some as the procedure of choice. However, since these patients are poor risk cases the mortality is high. In view of this, simple procedures like lymphovenous shunt, wherein anastomosis of the thoracic duct to the subclavian vein in the neck is carried out, has been attempted with limited success. Attempts to drain the ascitic fluid through the intestines by isolating a loop of ileum and everting it in the peritoneal cavity and by opening out one cut end of a loop of intestine into the peritoneal cavity (coelioenterostomy) have been made but have not stood the test of time. Though some Western authors notably Sheila Sherlock condemns the use of surgical procedures in the treatment of ascites in our socio-economic environment where a high protein, salt-free diet and use of costly diuretics on a long term basis are impossible in the majority of patients, there is a place for a simple surgical procedure that can drain away the ascitic fluid.

Before embarking on surgical procedures however, it is important to evaluate the presence of co-existent factors which may be treatable, eradication of which by themselves may clear an otherwise intractable ascites. For example, many patients with cirrhosis have in addition, parasitic infestation like hookworm and amœbiasis, also malnutrition with hypoproteinæmia and sometimes even tuberculous peritonitis. Effective treatment of these conditions may be all that is required to clear the ascites.

GRAVE FEATURES OF ACUTE ABDOMEN*

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" Happy is he who has no serious consequences of his erroneous diagnosis to regret " (*Howard Marsh*)

INTRODUCTION :—An acute abdomen is a state of disease of any abdominal viscera which needs immediate medical treatment or surgical intervention to avoid an imminent fatality.

Acute abdominal conditions occur in a wide variety of diseases of practically all the viscera in the abdomen and it is not possible to cover in detail the entire spectrum of diseases which come under this heading due to limitations of space; and a few important commonly seen conditions are discussed here.

Diagnosis of acute abdominal catastrophes could be a simple affair, if the clinician goes through the process of eliciting the physical signs in a systematic manner and correlating them with the primary symptoms for which the patient has come. Many a time we reach a point of indecision as to whether the patient is suffering from an acute abdomen or not. This indecision could prove fatal if the case turns out to be one which requires immediate surgical intervention. In order to avoid such fatalities certain basic physical signs should be borne in mind.

Intra-abdominal inflammations.—*Acute appendicitis* should be suspected if a patient of any age group is brought with H/o abdominal pain around the umbilicus, with a tendency to shift to the right iliac fossa. Vomiting and constipation may follow the pain. Fever is an associated symptom.

On examination, the patient may show features of toxæmia with sweats, fever, rapid pulse and dehydration depending on the intensity of vomiting. The patient is asked to point to the exact site of pain with a single finger and then abdominal examination is started keeping the affected area last. In most cases the respiration is more thoracic than abdominal. The contour of the abdomen remains unaltered unless perforation has occured. Palpating from the left iliac fossa, one should arrive at the point of maximum tenderness, which in classical cases is at a point on a line joining the umbilicus with the right anterior-superior iliac spine, at the junction of the middle third with the lateral third of that line (McBurneys sign). Release of pressure may give rise to pain at that point (Blumberg's sign). This rebound tenderness indicates inflammation of the parietal peritoneum. Pressure exerted over the

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*Specially contributed to the 'ANTISEPTIC'.

left iliac fossa may also produce pain in the right iliac fossa (Rovsings sign).

The physical signs greatly vary with the position and length of the appendix. In the case of retrocæcal appendix, the pain is higher and more posterior and may simulate a renal colic.

Two other common conditions that are mistaken for appendicitis in S. India are amœbic typhlitis (Inflammation of the cæcum) and acute salpingitis.

Appendicular perforation :—With the onset of perforation, the patient feels better due to the subsidence of pain and the rigidity disappears temporarily; but the general condition deteriorates soon with septic fever, rapid pulse, falling blood pressure, cold and clammy extremities, as generalised peritonitis sets in.

Amoebic liver abscess :—The commonest and most important complications of intestinal Amœbiasis is Liver Abscess. It does not occur in the initial attacks of dysentery, but shows itself during a remission.

The patient feels discomfort and fullness in the liver region and later pain and tenderness become increasingly severe. The pain may be described as dull and constant in the right hypochondrium and acutely tender on pressure due to stretching of the liver capsule or it may be colicky because of gastric peristalsis pressing on the inflamed liver. The pain is sometimes referred to the right shoulder. This is accompanied by irregular bouts of fever and marked sweating. The patient usually comes when he is prostrated, with a pale sallow sweating skin and not uncommonly jaundiced.

The liver is enlarged and tender. There is restriction of respiratory movement on the right side. Tenderness may be noted in the right lower intercostal spaces over the liver area. When the abscess is in the left lobe of the liver, there is frequently bulging of the abdominal wall at the epigastrium.

One of the common associated conditions with Amœbic liver abscess or to be more correct—Amæbic liver abscess is commonly a consequence of typhoid fever in our country. It is many a time observed in this hospital, that proved cases of Typhoid, not responding to adequate doses of chloromycetin over a long period have a dramatic response, with subsidence of fever, on the administration of Amœbicidal drugs. It may be that intestinal ulcerations in typhoid fever permit the docile amoebæ to move into the tissues and get into the portal circulation to cause Amœbic hepatitis.

It is not out of place to mention here that it is a very common observation to find pus cells and RBC in the urine of patients with amœbic hepatitis, misleading to a diagnosis of urinary infection.

The grave complications of Amoebic liver abscess are usually due to the rupture of the abscess into one of the cavities of chest or abdomen, leading to pleurisy, lung abscess, pericarditis and peritonitis.

The diagnosis of such cases will not pose any problems if a careful history is elicited, but these situations are usually very grave with a very high mortality unless recognised immediately.

Perforation of the gut.—(1) *Perforated peptic ulcer* :—A perforated duodenal ulcer is much more common than a perforated gastric ulcer. The patient will give a distinct history of peptic ulcer with a sudden exacerbation of the pain.

On examination general features of shock may be present if perforation has existed for a sufficiently long time. On inspection the abdomen will be initially retracted at the epigastrium but as peritonitis develops this sign will disappear. Palpation of the abdomen will reveal a classical tense, taut, tender unyielding board-like rigid epigastrium and upper part of the right rectus. This indeed is a grave sign developing as a result of irritation of the parietal peritoneum by the irritants released through the perforated gut. Though this sign is definite to appear in a perforated peptic ulcer, it is however unlikely to be seen in multiparous women and aged patients who do not show rigidity, as the muscle wall had lost its tone due to stretching and age; and when the patient is brought several hours after the perforation has occurred. This is because of spreading peritonitis and increased production of peritoneal exudate which tend to dilute the irritants thus removing the cause for the rigidity.

Typhoid perforation :—This occurs most often when the patient is being inadequately or irregularly treated for typhoid, at about the third week of the febrile illness, or thereafter and may also be due to over enthusiastic steroid therapy. The patient presents with a sudden onset of pain associated with a rapid fall in body temperature. Signs of circulatory failure begin to manifest themselves. Abdomen shows rigidity and tenderness around the umbilicus, if steroids have not been exhibited, with obliteration of liver dullness.

Hæmorrhage.—Gastro-intestinal haemorrhage will not produce any positive localising sign. Signs of peripheral circulatory failure, correlated with a previous history of an ulcer, portal hypertension, etc. in association with mild distension, tenderness and a silent abdomen will help one to come to a probable diagnosis. This is not discussed in detail here, as the same is done elsewhere in this issue.

Ruptured tubal gestation :—Female, with history of amenorhoea and sudden onset of lower abdominal pain with features of peripheral circulatory failure, should immediately make one suspect a ruptured ectopic gestation.

Abdominal examination :—Slight distension is likely to exist as a result of meteorism. Tenderness and rebound tenderness are maximum at the site of rupture. Percussion will reveal free fluid in the abdominal cavity.

Vaginal findings :—Tender cervix and fornices with sometimes a mass in the pouch of Douglus which feels boggy and tender. Bleeding from the uterus is invariably present.

Intestinal obstruction.—It is fairly easy to come to a diagnosis of intestinal obstruction as the cardinal features of pain, vomiting distension and constipation, can hardly be ignored. The patient has intermitent collicky pain, with vomiting and corresponding degree of dehydration. Distension of the abdomen depends on the type of obstruction, competence of the ileo-caecal sphincter, and the duration of obstruction.

Careful inspection of the abdomen might reveal a visible peristalsis, which can be made demonstrable by tapping the abdominal wall or by applying a drop of ether.

Palpation though made difficult by the distention, a positive finding will prove invaluable. A kidney shaped mass with its concavity towards the umbilicus will be made out in intussusception. A distended sigmoid will give the feel of a pneumatic tyre and any irregular firm mass will confirm the presence of a malignant mass which would have led on to obstruction. 'Signe-de-Dance' this is aspecial feature of intussusception, where palpation of the right iliac fossa, reveals an emptiness in the place of the cæcum. Abdominal percussion shows hyperresonance and auscultation confirms obstruction by the increase in intensity and frequency of the bowel sounds. (Borborygmi).

Rectal examination :—Efforts should be made to palpate a mass which may be a inspissated fæcel mass, the apex of an intussusception, or even a malignant growth. An empty rectum is suggestive of an obstruction much higher.

Peritonitis.—To come to a conclusion of peritonitis is fairly easy but to detect the cause during the stage of peritonitis is extremely difficult. The patient has very little to complain and sometimes feels at ease. It is essential that one should go deep into the history before examining the patient as it might often be helpful to come to a reasonable diagnosis.

General examination :—Rapid low volume pulse, steadly falling Blood-pressure, pallor, profuse sweating, a pinched-up anxious pale face with a dry tongue are characteristic (facies hippocratica) features.

Inspection, shows a distended abdomen, moving very little with respiration. Palpation should commence from the upper

1/3 of the thigh, so as to demonstrate the abdominal tenderness as soon as you go beyond the inguinal ligament. Percussion will reveal the presence of free fluid in the abdominal cavity and auscultation will give you the evidence in the form of an ominous silent abdomen.

Judging from the grave features exhibited by these abdominal catastrophes, the diagnosis, if not very obvious, is definitely within our capacity to get at. Though it is becoming a habit to rely more on investigations and less on clinical features, the satisfaction and triumph achieved by coming to a reasonably correct diagnosis based on clinical features cannot be equalled.

OSTEOTOMY FOR ARTHRITIS OF THE KNEE

Interest in the application of osteotomy in the treatment of arthritis of the knee was stimulated by the development of high femoral osteotomy for arthritis of the hip. At each joint an operation aimed primarily at correcting deformity has been found to have an even greater value in relieving pain. At the tibio-femoral joint special mechanical considerations arise, for here deformity caused by an asymmetrical arthritis can itself make the arthritis worse. Loss of articular cartilage on one side of the joint produces a concavity to that side, which increases the weight bearing stresses on the worst affected joint surfaces. Correction of deformity transfers the load back to the less severely affected condyles. The value of surgical correction of valgus or varus deformity in osteoarthritis or in late and quiescent rheumatoid arthritis has been now well established. Good or excellent relief of pain can be expected in rather more than three of every four cases. Success depends partly on the precision with which the normal weight bearing angle of the knee is restored. Preoperative valgus or varus deformity can be assessed accurately only by radiographs taken when the joint is bearing weight. Lateral deformity, once so identified and measured may usually be readily corrected by the resection of a wedge from the tibia, preferably at or above the level of the tuberosity. Tibial osteotomy is less satisfactory for correcting more than a few degree of flexion deformity and is in appropriate for lateral deformity if its application would produce a seriously oblique plane to the knee joint. Supracondylar osteotomy of the femur is then preferable, though this is more likely to decrease knee motion.

The value of osteotomy in arthritis of the knee without lateral deformity is less well established. There is evidence that relief of pain after osteotomy for arthritis of the hip is not only due to altered joint mechanics but also to changes in the venous drainage of the related bones. If osteotomy of the knee relieves pain in the same way it might be expected that double osteotomy, dividing both tibia and femur would be even more helpful. Experience has not so far borne this out. Double osteotomy has been applied without discrimination to knees with or without lateral deformity. The design of the experiment has not allowed a firm conclusion on the importance of dividing one bone or two in relation to correcting angulation. In the orginal report in of knees the patients obtained excellent or good relief of pain after surgery. In a more recent careful (if again retrospective) survey of 65 operations, in 41 the knee became free or almost free of pain though functional improvement was much less striking. Loss of movement was a disadvantage, particularly in the osteoarthritic knees, where it averaged 27 and was sometimes severe.

Strenuous efforts are now being made to develop a reliable prosthetic arthroplasty for the knee. Until such a solution is available arthritis affecting the knee and causing disabling pain which does not respond to simple palliatives, including correction of obesity, can sometimes be considerably helped by surgery. Procedure of established value include patellectomy for localized patello femoral arthritis, the removal of loose bodies causing spmptoms, and osteotomy for lateral deformity. Osteotomy in the absence of deformity is of less certain value, and any procedure requiring division of the femur incurs a risk of increased knee stiffness. Editorial, *Brit. Med. Jour.*; 4-1-1975).

ALLERGY TO CORTICOSTEROIDS

Apparently any drug can cause allergic or idosyncratic reactions in man. Corticosteroids are often used in treating these complications, so it is perhaps surprising that they themselves may provoke anaphylactic responses. But Mendelson *et al* have recently reported the case of a young asthmatic who rapidly developed urticeria, angioneurotic oedema, and increased bronchospasm after intravenous injection of methylprednisolone or hydrocrotisone.

The drugs had been prescribed in proprietary preparations (Solu Medrone and Solu Cortef) so that much careful detective work had to be done before the culprits could be identified. Solu Medrone contains methyl prednisolone sodium succinate in a diluent which contains many preservatives including methylparaben and propylparaben, which are known skin sensitizing agents Intradermal skin tests using solu-medrone or Solu Cortef gave negative results up to 48 hours so it was decided to test the effect on the patient of solu-medrone under supervision in hospital. Initially 4 mg of the preparation was injected intravenously and the patient experienced no untoward symptoms during the subsequent hour. However when 40 mg of the drug was given intravenously he developed urticaria, angioneurotic oedema, and severe bronchospasm. An intravenous test dose with the diluent alone caused no untoward reaction to evaluate the effect of sodium succinate 40 mg of plain methylprednisolone was given orally, and thirty minutes later he developed the reaction as before.

Later tests with 40 mg of prednisone of prednisolone and 6 mg of dexamethasone produced no abnormal symptoms. The intradermal skin tests were repeated using methyprednisolone and hydrocortisone tablets or powder with positive results, whereas negative skin tests were obtained again with Solu-Medrone and Solu-Cortef and also with methylprednisolone sodium succinate methylprednisolone sodium acetate hydrocortisone sodium succinate prednisolone, prednisone, triamcinolone, dexamethasone, cortisone acetate, and the diluent solution. Passive transfer of the positive reactions were negative on three recipients, though the patients positive skin test to Bermuda grass was passively transferable to each of the recipients. Serial measurements during two intravenous challenges which proviked anaphylaxis showed no significant change in six components of the complement system or fibrinogen.

The interesting inconsistency between the results of the intravenous challenges and the skin tests is that the succinate salts of the steroid produced symptoms on challenge but only methylprednisolone or hydrocortisone alone gave positive skin tests. Mendelson *et al.* suggest that small structural changes in the molecule produced by succinylation or acetylation may have been responsible for the negative skin tests.—(*Editorial, British Medical Journal*, 7-12-1974).

LEARNING FROM LAPSES*

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VAST progress is being made in all branches of medical science and advances in Gastro-enterology, undoubtedly the largest subspeciality of General Medicine and Surgery and other allied major basic disciplines, is not lagging behind. Indeed the advances are so vast that no one can claim to be fully conversant at any one time with all the progress in any subspeciality however restrictive he may elect to be. The main aim of all advances, should be to ensure sound public health with stress not only on cure but also prevention of diseases, be it infective, nutritional disorder or even malignancy. Yet another major realisation in the modern *era* of explosion in explorative techniques, as also in therapeutic regimens, is the ever increasing problem of iatrogenic diseases as also the necessity to restrain our over-enthusiasm for investigations, particularly of investigational procedures, that may be of value more as a research tool in laboratories only, rather than of aid in the management of the patient on hand. The ultimate aim of all progress should be to make the advances available in every nook and corner of the country.

Alimentary disease has always posed diagnostic challanges to all. It is the main factor that makes any one interested in this discipline to be humble ; ever vigilant for any possible pitfalls and prepared to revise the diagnosis if subsequent developments dispel the earlier conclusion and ensure that the patient does not suffer from the diagnosis though not from the disease ! He should always be guided by the axiom "laboratory aids are entirely for correlation with the clinical picture and positive or negative laboratory reports are no licence to stop thinking further".

It will indeed be impossible to cover in this short paper all the challenges which the symptoms and signs, diagnostic aids and therapeutic regimens pose in alimentary diseases. It is too well known that in alimentary diseases symptoms are plenty but the signs are few and the same sign and symptom may be present in a variety of conditions. Very few diseases start with a label straight away and so the key-word is constant vigilance. The improvement in diagnosis in a particular case by the Senior compared to that by a Junior as also the consultant over family physician is to a significant extent due to the "time interval" between the onset of symptoms and the time when the patient is first seen by the particular person ; "Time interval" is always in favour of the senior over the junior and the consultant over the family physician or the one destined (!) to see the patient earliest. This is no excuse to permit complacency and carelessness in the doctor who is called in, to see the patient first nor a licence to infuse unwanted terror or fright in the mind of the patient and relatives mainly to shield himself from being accused of having missed an uncommon or even totally incurable disease even at the very early stage!

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*Specially contributed to the 'ANTISEPTIC'.

It is said "Confession is good for the soul but not for reputation". It cannot hold true better in any field than in the medical profession. I shall briefly recapitulate the common problems that I face as one interested in gastroenterology, an experience, which I am sure, all may be facing.

Functional (vs) organic disorders of G. I. tract :—Failure to detect any organic (suspected) cause is no indication to label a disease as functional. At the same time, it is hazardous to submit patients to a variety of investigations and hazards of drugs without really spending some time to gain the confidence of the patient and make him or her confide the real problem. It is not uncommon to find "Nightmares" guilt; marital maladjustment, cancerphobia as real cause of symptoms and once this is unravelled there will no longer be any necessity for the patient to visit the doctor to receive drug therapy! This merely stresses the importance of psychiatric medicine. However here is a word of caution. Though gastroenterology will be the largest branch of medicine where the necessity to exhibit antidepressants and tranquillisers is greatest, it is necessary to question oneself whether the tranquilliser and/or antidepressant is needed more for the doctor himself as a sequele to his failure in detection of an organic cause in the patient or really for the patient's sake! It is dangerous to label a patient as "functional" when the ESR is raised and continues to rise while under observation; irregular fever is recorded; occult blood is persistently present in the faeces; there is unaccounted progressive weight loss and also a persistent and crippling bone-pain.

Tender hepatomegaly :—While there is no doubt that hepatic amœbiasis is a very common cause for tender hepatomegaly there can be no denial of the fact that many other causes of hepatomegaly are missed by putting a brake to thinking further. It is of course necessary to treat as for amœbiasis, whenever there is suspicion in such cases, with any standard treatment schedule of choice. But what is to be criticised is merely changing from one schedule to another or merely blaming the drugs for no fault of the drugs! Efforts must be made at least then to arrange for further investigations and for aspiration and/or aspiration biopsy. It is not uncommon to find ultimately that the cause of hepatomegaly was untreated diabetes, ptosed liver or congenital anamoly including vascular malformation, not to mention of neoplasia, benign or malignant. Equally important is it to realise that all cases in which pus is struck on needling through the intercostal route is not necessarily pus from amœbic liver abscess. If there is rapid reaccumulation of pus after initial satisfactory aspiration combined with effective antiamœbic therapy and other general supportive measures, it is always worth while reviewing the cause. It is not uncommon to note that such cases end up as pseudoabscesses—breaking down hepatomas ; pyogenic abscesses liver ; infected parasitic or nonparasitic cyst; actinomycosis of the liver ; infected dermoid or teratoma ; infected hæmatoma ; empyema of gall bladder ; subdiaphragmatic abscess ; intraperitoneal abscess as a sequelae of perforation of a hollow viscus including perforation of amœbic ulcerations in colon or infected pseudopancreatic cyst apart from even primary supradiaphragmatic causes. It is in these situations that aggressive attempt at open drainage solves the diagnosis though not necessarily the disease perse. This does not mean amœbic liver abscess requires open drainage. Almost all proven amœbic liver abscess settle down with closed drainage combined with effective antiamœbic therapy. Antiamœbic therapy *per se* does not prevent necessity of aspiration, if abscess is already present. Indeed, if response of proven amœbic dysentery to effective antiamœbic therapy is poor one should think of co-existing liver abscess apart from other associated independent diseases. Of course, liver abscess-amœbic in aetiology-particularly of the left lobe may mimic many diseases including malignancy not only of liver but adjoining viscera as well.

Lump left hypochondrium :—While the problem exists for management of what may be obvious hepatic lesions, it is not an exaggeration to say that the problem may be greater for masses in the region of the left hypochondrium. It is no wonder that much emphasis is laid in undergraduate medical training to differentiate splenic tumour from kidney and other retro peritoneal tumours. I encounter this problem too frequently. Hyper-nephromas, suprarenal tumours, cysts in the tail of the pancreas, certain other retroperitoneal tumours and even cancer stomach closely simulate splenomegaly. What may be suspected as tender splenomegaly may at times turn out to be acute pyo or hydro nephrosis related to an impacted stone around the pelviureteric junction.

Renal Vs liver and other G. I. diseases :—Apart from the problems one faces in differentiating renal swellings, it is not uncommon to be confronted with situations where it may be very difficult to differentiate on simple clinical examination and clinical laboratory investigations alone whether one is dealing with a patient with cirrhosis of the liver with urinary tract infection or nephrotic syndrome in whom the proteinuria at the time of examination is not massive and in whom ascites is more marked than the puffiness of face or œdema of the legs. Sometimes it is the clear knowledge of his past or subsequent developments that serves to unravel this mystery. The mistakes in interpretation of radio-opeque renal stones, particularly in oblique views, during barium studies (not compared with plain films) are so many that they may sound fictions than facts! Kidneys, in unusual site, be it higher up in the thorax or low down in the pelvis and fused kidney in the pelvis can really make one commit horrible mistakes. If unwary, single fused kidney at an ectopic site may be removed under mistaken diagnosis as a malignant mass or a benign tumour without prior appropriate investigations.

Distended abdomen :—It is well known that fluid, flatus, fæces, fat and fœtus in the female are the common causes of abdominal distension. One is taught the importance of eliciting such basic physical findings such as position and shape of the umbilicus, fullness of flanks ; fluid thrill ; dullness/resonance in flanks; ready shifting dullness and importance of rectal and/or vaginal examinations. Even when one is aware of these, it is not uncommon to make errors such as mistaking ovarian cysts, huge hydropelvis / hydronephrosis ; pseudo-pancreatic cysts ; retroperitoneal cysts, megacolons and even massive mesenteric lipoma as ascites. One is instructed that the impulse transmitted through fat in abdominal wall must be blocked while eliciting fluid thrill in a case of suspected ascites but little did I realise till recently that a massive mesenteric lipoma (of course intra-abdominal) can mimic free fluid in the abdomen quite closely. Dampering the impulse through the fat in the abdominal wall in such situations does not of course prevent the impulse traversing through the lipoma itself ! An interesting problem encountered in our Department, that of a girl of ten years, weighing a little over 20 Kg. carrying a massive mesenteric lipoma, 6 5 Kg. in weight, in her abdomen, presenting with a huge abdominal distension closely simulating a tense collection of fluid, cured by surgery, is being published elsewhere.

Abdominal tuberculosis :—Abdominal tuberculosis is quite common here. It simulates many diseases but alas! may co-exist with many of them. Hence it may not be out of place here to stress the limitations in the diagnosis of abdominal tuberculosis as well. The diagnostic clues are far less reliable than in pulmonary tuberculosis. The criteria of assessment of response to medical therapy are equally poor. Indeed, the awareness, that medical therapy does not always prevent the occurrence of complications such as obstruction and perforation, the former being more frequent than the latter, should make one to be more guarded in diagnosis. One must be prepared to have close supervision and followup and be prepared to consider laparatomy if the overall general condition deteriorates in spite of therapeutic trial, ascites proves refractory; anæmia progressive, ESR continues to rise and fresh masses appear. Indeed too much reliance should not be based on inspection finding of the apparant nodules "tubercles" in the peritoneum or apparant caseous appearance of nodules, even at surgery or peritoneoscopy. The material must always be sent for histopathological examination. Histopathology may indeed give a rude shock at times! It is better, when the clinical diagnosis is in doubt for patient's sake, for the diagnosis of tuberculosis to be revealed at surgery as a surprise rather than for abdominal malignancy including lymphoma being missed for a very long time. I had a patient with recurrent abdominal discomfort whom I treated as abdominal tuberculosis on what I thought fairly firm corroborative evidence only to find that when he had to have surgery during recurrence of abdominal pain, a few months later, all he had was a submucosal lipoma in the intestine, with intussusception. Very likely it must have been the cause of his symptoms for a long time.

Femoral hernia:—It is worth emphasizing that though femoral hernia is not very common, it must be borne in mind all the time. I have both missed it as well as overlooked it in certain situations. It is one of the conditions which can readily pass as abdominal tuberculosis because of long duration and vagueness of symptom as also the swelling in the groin, sometimes for even years, passing off as a lymph gland. Wœ unto the patient if such swelling is aspirated or biopsied and the material thus obtained not carefully examined by watchful eyes! Luckily, to my personal knowledge, such a situation has not arisen so far but I am always afraid that this can occur.

Diarrhoea and Dysentery :—It is not possible to narrate the many problems and pitfalls in the diagnosis associated with this condition. Suffice it to say many mistakes occur because rectal examination has been missed. Sigmoidoscopy misses hæmorrhoids frequently. Proctoscopy though undoubtedly the best for detection of hæmarrhoid, if done as the sole step under "torch light illumination" may at times fail to visualise benign polyps or malignant lesions even as low as 2" from anal orifice and felt even with the finger. If rectal examination is not done, or attempted to be done, one will never detect a malignant lesion low down within the reach of finger, stricture benign or malignant or a complete perineal tear and incompetent sphincter as the cause of diarrhoea—really spurious diarrhoea—complained by patients. Mucus secreting soft polyps in rectum and colon may at times be missed not only at barium enema but also at sigmoidoscopy and such cases may be labelled as irritable colon. Occasionally large polyps with long thin pedicles announce themselves peeping out through the anal orifice, after being missed at sigmoidoscopy as well as in the barium enema.

Idiopathic proctocolitis:—While it must be stressed that we do get quite a number of cases of idiopathic granulomatous or non-granulomatous proctocolitis (idiopathic ulcerative colitis) in our place, this diagnosis should not be too loosely used for all and sundry non-specific lower bowel disturbance. It is not uncommon for some to label patients with irritable colon wrongly as idiopathic proctocolitis, (even in the absence of history of blood mixed with fæces and sigmoidoscopy as the important investigative step), purely on the apparant loss of haustration in a distended distorted rectum and colon in a few pictures during barium enema. Radiologists are more aware, as they should be, than others, that the apparent loss of haustration in some pictures alone in the absence of clinical symptoms and endoscopy should not be labelled as "COLITIS" either by the radiologist or other clinicians. While some patients with marked anxiety state (as most of patients with irritable colon are) are happy at such a label of "COLITIS" it can be the cause of serious iatrogenic problems, not only because of the fear induced in the minds of the patients about complications of the disease fear once created difficult to dispel by others) but also the risks of drug therapy.

Barium swallow Vs barium meal:—While we are aware of the importance of clinical examination, we are equally aware of need for investigations. Sometimes owing to the high costs involved in the investigations one may be compelled to restrict the investigations, particularly the radiological ones to the bare minimum. It may happen that in such conditions, serious pitfalls may occur. I am aware of situations where regurgitation has been mistaken for vomiting and vomit for regurgitation. One may have suspected sliding hiatus hernia and reflux oesophagitis on clinical evidence and asked for only oesophageal pictures with inclusion of the upper part of the stomach. Sliding hiatus hernia and gastro-oesophageal reflux may have readily been demonstrated to the delight of the clinician. But, to one's horror, a more distal obstructive lesion—gastric outlet obstruction benign or malignant, the real cause of the reflux, might have escaped attention. It is not also uncommon to study only the stomach and duodenum and pass them as normal while a causal lesion higher up has not been carefully picked up at radiology or entirely missed, as no instruction has been left to study the oesophagus. It is equally important to study the stomach carefully particularly the region of the fundus, if the routine barium swallow does not reveal any abnormality in the oesophagus in a patient with dysphagia. It is of course necessary to remember myaesthenia gravis as dysphagia where no hold up of barium is demonstrable.

G.I. symptoms and obstetrics :—A brief comment on certain aspects of the G.I. symptoms and obstetric problems will not be out of place. It is necessary to ensure that a women in her child bearing period is not pregnant before radiological investigations of the abdomen are ordered. It may fall upon the general practitioner, not to mention the gastroenterologist, to pick up for the first time, early first pregnancy in a married lady, even long before she suspects it! Excess salivation, heart burn, regurgitation, vomiting, altered taste and vague abdominal discomfort may make them seek medical advice, unaware of their early pregnancy. Errors in diagnosis are greater particularly when viral hepatitis is frequent and in families with a high incidence of gall bladder and other alimentary diseases. This, I have noted, is more frequent amongst educated, recently married ladies who may explain off the delay in periods as their natural phenomenon. To the horror of the attending doctor and others they may even land up a few days later with either a ruptured ectopic or a full barium meal pictures with or without oral cholecystogram in addition!

While I am very cautious about this, I must say I have had very real problems at times to differentiate abdominal masses other than those due to pregnancy from pregnancy and ovarian tumours from other lumps in abdomen. My only consolation is that even experienced obstetricians and gynaecologists face this diagnostic dilemma now and then. Indeed, I feel compelled to repeat my favourite statements to my friends and colleagues in the department and those outside, that sometimes I find it really difficult to differentiate whether the problem posed by a particular lady patient is due to GUDDA (*Telegu*) meaning tumour or BIDDA (*Telegu*) meaning child.

Conclusion.—I have tried, to set forth the medical problems that confront those interested in gastrœnterology. There are many more and there will be opportunities to present them on a different occasion. I have just drawn the attention of the readers to some of these problems. But, in this paper no attempt has been made to sort them out. Suffice it to say, we must be aware, that at times, we do miss certain simple points in history taking, clinical examination and basic non-expensive investigational procedures.

Constant vigilance is required. We must be prepared to revise our diagnosis particularly when the patient does not make as good a clinical response as anticipated or really deteriorates. It is better to re-examine them as if we are seeing them for the first time without being biased by our earlier opinion and ensure that fundamental steps in clinical examinations and simple and basic laboratory investigations have not been missed on earlier occasions. Recent advances in sophisticated investigative procedures currently coming into vogue are no substitutes for these basic principles. An astute clinician should take it as a challenge and be able to take pride that sophisticated investigations have not bettered his initial outpatient clinical diagnosis and that his clinical diagnosis has withstood all investigations and challenges that a modern research workers in any ultra modern medical institute in the world may like to offer. It does not mean he should restrict himself to his "impressions" without submitting his diagnosis as well as the patient, even to basic non-invasive investigations necessary.

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THE USE OF SYRUP OF IPECACUANHA AS A FIRST-AID MEASURE IN THE MANAGEMENT OF ACCIDENTAL POISONING IN THE HOME

BY OSWALD JONAS AND NEIL SMYTH

As an inducement for children to drink it, the preparation is flavoured with raspberry and the following formula is used :

Liquid extract of ipecacuanha	...	6 ml
Dilute acetic acid	...	2·5 ml
Glycerin	...	10 ml
Raspberry essence	...	2 ml
Amaranth solution, B.P.C.	...	3 ml
Concentrated chloroform water, A.P.F.	...	2·5 ml
Syrup to	...	100 ml

This formulation has so far proved to be stable for a period of three years when stored in amber, airtight containers at room temperature.

In our community, delay in reaching treatment facilities is often excessive. In the light of our study, it appears that, to minimize the loss of valuable time between ingestion of a potentially harmful substance and commencement of treatment in the casualty department, syrup of ipecac should be administered in the home on the instruction of a doctor or poison information centre. The administration of ipecac at home would, in our series, have induced vomiting in most children before their arrival at this hospital. Syrup of ipecac is safe, effective, practical and acceptable to the patient.

In our opinion, steps should be taken to make syrup of impeca freely available for over the counter sale so that the emetic becomes available in as many households as possible, where most accidental poisonings occur.—(*The Medical Journal of Australia*, 26-4-1975).

PEPTIC ULCER AND ITS MANAGEMENT*

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THE term peptic ulcer was first used by Quincke in 1882, to indicate that the pepsin of the gastric juice is responsible for its production or perpetuation. This term is now chiefly used to embrace an ulcer in any part of the gastro-intestinal tract which comes into contact with gastric juice.

Sites of its occurrence.—(1) Stomach, (2) duodenum, (3) œsophagus following gastro-œsophageal reflux, (4) Meckel's diverticulum where the gastric mucosa is found and (5) the jejunum after a gastrojejunostomy.

Peptic ulcers can be acute or chronic :—Acute ulcers (erosions) are defined as ulcers which do not penetrate the muscularis mucosa. These ulcers can only be visualised on gastroscopy, and they heal spontaneously without any specific treatment.

Most of them are however chronic ulcers which will be discussed in detail :

It is useful clinically to separate the approaches as the implications are very different even though the ulcers are similar pathologically.

Chronic duodenal ulcer :—All diseases are now considered to be multifactorial in origin. Duodenal ulcer is presumbly also due to a combination of organic, and psychic factors, only some of which may have been uncovered. We understand some of the factors responsible for duodenal ulcer diathesis but we cannot explain why some duodenal ulcers appear and then naturally heal in particular susceptible individuals.

Regarding the appearance of a duodenal ulcer on the clinical scene, Schwart (1910) made three postulates :—

(1) Peptic ulcer occurs only in sites exposed to acid—(no acid—no ulcer) (2) The ulcer formula—autodigestive power of gastric juice (*versus*) resistance of mucosa, (3) An ulcer is only a symptom of ulcer disease; excision of the ulcer does not cure this disease.

Advances in our understanding during the last sixty years have mostly been elaborations on the "acid (*vs*) mucosal resistance" formula and especially a fuller understanding of the gastric hypersecretion associated with duodenal ulcer.

Incidence :—It occurs more frequently in men (10 : 1) in the age group of 20 to 55 years. It is rare before the age of fifteen. Usually occurs within 3 cm. of the pylorus and occurs with equal frequency in the anterior and posterior walls.

Simultaneous occurrence of gastric and duodenal ulcers is common. It is safest to assume that a patient with both has primarily a duodenal ulcer. It is suggested that a chronic duodenal ulcer which causes delay in gastric emptying and consequent gastric stasis stimulates the production of gastrin and thus the development of gastric ulcer.

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* Specially contributed to the 'ANTISEPTIC'.

Pathophysiology.—(1) *Hypersecretion of gastric juice* :—Patients with a chronic duodenal ulcer secrete more gastric juice, more acid and more pepsin than normal subjects both at rest and in response to stimulation. The association of hypersecretion and duodenal ulcer is such that about half of the patients with duodenal ulcer have a higher peak acid output than the normal upper limit and about half the normal subjects secrete less than the lowest level of peak acid-output formed in patients with duodenal ulcer.

(2) *Gastrin* :—" Is the hypersecretion of acid in duodenal ulcer disease associated with increased production from the gastric antrum?". This question cannot be answered since gastrin output cannot yet be measured. The only measurements available are of the concentration of gastrin in the antrum and in the blood. Increased gastrin-like activity has been found in antral mucosa removed at partial gastrectomy.

(3) *Tissue resistance and disturbance of motility* :—There is no clear evidence that disturbance of gastric motility and resistance of duodenal mucosa is diminished in duodenal ulcer.

(4) *Genetic factors* :—A family history may be striking. It is common in ' O ' group and in non-secretors of ABO group.

(5) *Emotional factors* :—Emotional factors do play a part. Patients with duodenal ulcers will often themselves clearly point to an emotional upset which may have triggered the onset or exacerbation of their ulcers.

(6) *Endocrine factors* :—Because peptic ulcer is far more common in men than in women it was suggested that the œstrogenic hormone protects them against the ulcer. In Addison's disease and in hypopituitarism there is gastric hyposecretion and ulcer is practically rare. A high incidence of duodenal ulcer has been reported in hyperparathyroidism.

(7) *Other predisposing diseases* :—The incidence of peptic ulcer is higher in chronic obstructive lung disease, P. T. rheumatoid arthritis, cirrhosis of the liver, gastrin secreting humour. This is apart from the drugs taken for these diseases which are ulcerogenic.

Clinical features :—*Pain* :—This is the most important symptom for which the patient comes to the doctor for relief. Uncomplicated duodenal ulcer pain is poorly localized in the midline, with penetration it may be radiating to the back. The classic rhythm of pain is characteristic ; it begins one to three hours post-prandially and is relieved by antacids or by vomiting.

The occurrence of night pain is justifiably a strong clue to the organic nature of the disease. Exacerbations or precipitation of pain by food is rare in duodenal ulcer and common in functional diseases. Remissions and relapses are characteristic of peptic ulcer pain.

Induced vomiting can occur. It also represents outlet obstruction. Clinical examination is the most unrewarding. A number of non-specific symptoms such as constipation, epigastric fullness, belching, anorexia, weakness, nausea and diarrhœa may occur.

Clinical spectrum of peptic ulcer disease.—I. *Dyspepsia* :—

A. Typical or suggestive of peptic ulcer disease :— (1) peptic ulcer disease with visceral pain (Classic syndrome). (2) peptic ulcer disease with visceral and somatic pain :— (*a*) obstruction, (*b*) penetration, (*c*) perforation, (3) pseudo-ulcer duodenitis syndrome.

B. *Atypical symptoms* :—1. Somatic symptoms. 2. Functional like symptoms.

C. *Ulcer with special features* :—(1) Post bulbar duodenal ulcer, (2) pyloric channel ulcer, (3) combined gastric and duodenal ulcer, (4) ulcer symptoms in children and in the elderly.

II. Asymptomatic :—(*a*) radiological diagnosis (*b*) presentation as a complication (1) hæmorrhage, (2) perforation.

Diagnosis.—The most important criteria in the diagnosis of duodenal ulcer are :—Elicitation of the typical sequence of pain-food-relief and relief by antacids with periods of remissions and exacerbations.

The demonstration of the ulcer crater in barium meal pictures which is persistent in several consecutive films is the only means by which the presence of an active duodenal ulcer can be clearly established.

Gastric analysis in generally unnecessary in patients with the typical duodenal ulcer, but useful in the diagnosis of Zollinger-ellison syndrome in which the Augmented Histamine Test will show markedly increased basal acid secretion unaltered by histamine stimulation.

Management :—The major direction of peptic ulcer therapy today is towards decreasing the level of the *p*H in the upper G. I. tract which is done both by decreasing the amount and concentration of acid secreted and by neutralising whatever acid may have been formed. The first concern is to decrease those stimuli which come to the stomach from cerebral centres *via* the vagal pathways. Since hunger is a strong vagal stimulus, the patient with an active ulcer must be well fed. Arousal of appetite has been traditionally minimised by making the diet as utilitarian and bland as possible, discouraging the patient from anticipating mouth-watering or stomach stimulating delights at meal time.

Though avoidance of hunger partially decreases vagal stimulation the effect of vagally mediated emotional stresses must also be considered. Stresses of business life, family worries and other aggravations ought to be minimised.

Elaboration of gastrin, and avoidance of antral distention by giving small feeds, and of spicy foods are important. Alcohol should be totally avoided, as it will cause release of gastrin.

Antacids :—The effect of antacid therapy can be prolonged markedly if the drug is taken one hour after meals, the gastric acidity will then be decreasing to 30 to 40 percent of the control values.

The ideal antacid is yet to be found. Absorbable antacids like sodium bicorbonate should not be used because they induce systemic alkalosis.

Antacids containing calcium present a special problem because despite their proved *in vitro* efficacy, there is evidence of calcium induced hyperacidity *in vitro*. If large amounts of dietary calcium (usually in milk) are also being digested excess calcium may precipitate in the renal tubules at alkaline *p*H. levels, leading to progressive renal dysfunction—the milk-alkali syndrome.

Calcium carbonate and magnesium oxide in combination are effective because they are poorly absorbed from the small intestine. If given alone, calcium carbonate often causes constipation and magnesium oxide causes diarrhoea, complications which must be avoided by giving these powders in varying combination.

Antacid tablets are generally less effective than their liquid counterparts, because the suspension that results from their being chewed is not homogeneous and a good portion of the active constituents may adhere to the teeth.

Anticholinergics :—These drugs not only inhibit the direct effects of the vagus nerve upon the parietal cells but also decrease the vagal release of gastrin, and excessive motility. These drugs are generally given 30 minutes before every meal. The dose should be increased until side effects such as blurred vision and dryness of the mouth appear and are then reduced until these symptoms become tolerable. Isopropamide and Poldine methylsulphate are the only anticholinergic drugs sufficiently potent to warrant clinical use.

Surgical treatment :—Indications for surgery on patients with duodenal ulcer are the complications of the disease, (1) perforation, (2) organic obstruction, (3) intractable bleeding, (4) refractoriness to drug therapy.

The accepted surgical procedures are :—(1) Vagotomy with drainage operation: (2) subtotal gastric resection; (3) vagatomy and antrectomy, (4) segmental gastric and resection.

Chronic gastric ulcer :—The incidence of gastric ulcers is less common than that of duodenal ulcer; males usually predominate in the ratio of 3·5 : 1. Although it may occur at any age, it usually tends to occur between 45 and 55 years.

Gastric ulcers occur most often in the antrum; usually single; located in the lesser curvature. Gastric ulcer can occur in a patient who has or had duodenal ulcer but the reverse, does not occur.

Pathophysiology :—Several theories have been proposed to explain the development of benign peptic ulcer becoming active in the stomach :—(1) Hypersecretion of gastric juice of hormonal origin dependent on antral hormone gastrin. (2) decreased resistance of gastric mucosa and (3) injury to the gastric mucosa by various substances enhances the back diffusion of hydrogen ions which cause ulceration.

Patients with gastric ulcer may actually have hypersecretion of acid, which cannot be detected because of back diffusion of H ions accounting for normal or low acid secretion.

Clinical features :-Asymptomatic gastric ulcers are common.

Pain :—Usually epigastric in location and usually it is a burning pain, sometimes pain may be radiating to the back. Pain may occur within 30 minutes of the completion of a meal or it may be delayed as long as three hours after eating. So there is not much difference between the pain of duodenal ulcer and gastric ulcer with regard to its relief by taking food.

Abdominal tenderness :—Tenderness where present will be usually located in the epigastrium.

Anorexia :—Although equated with malignancy, the patients with benign ulcer who describe anorexia because food precipitates or increases their pain and they are therefore, hesitant to eat.

Weight loss :—This can occur with a benign gastric ulcer. This is due to anorexia and weight gain should be anticipated as the ulcer heals.

Nausea and vomiting :—Nausea with or without vomiting may be an important symptom of gastric ulcer. In some patients vomiting relieves the pain.

Gastric ulcer patients may present with hæmatemesis or malæna. Water brash can be the presenting feature in peptic ulcer.

Diagnosis :—Although the history and physical examination may be helpful, the differentiation between a benign and a malignant gastric ulcer (in the absence of a lump on examination) is made by a skiagram endoscopy, cytology, secretory studies and response to medical therapy.

Barium meal :—Plain Skiagrams of the abdomen do not reveal an ulcer ; As soon as possible in a patient who has symptoms suggestive of peptic ulcer, Barium meal X-ray is a *must*. Although this method is accurate in detecting gastric ulcers, its accuracy in distinguishing benign from malignant gastric ulcer is not good. There are various signs to suggest the benign nature but still in a genuine case it may be extremely difficult to differentiate.

Hampton's sign :—When present it is a sign of benign ulcer, this is usually a radiolucent line usually not more than 1*mm* in width probably traverses the orifice of an ulcer. Hampton and Shumacher conclusively demonstrated radiolucency as due to the thin undermined marginal mucosa of the crater. The line cannot be demonstrated in all benign ulcers ; hence its absence is not a diagnostic sign.

The ulcer collar is another radiological finding that is suggestive of benign gastric ulcer. This term refers to the translucent band which may intervene between the ulcer crater and the lumen of the stomach. This most likely represents oedema and inflammatory exudate which may surround the ulcer crater.

The presence of folds that radiate to the very edge of the crater is a third sign that may be used.

An incisura has been considered a sign of benignancy. Penetration of an ulcer beyond the gastric lumen on X-ray has been reported as benign in nature.

All these are good for therotical considerations but for practical purposes it is very difficult radiologically to differentiate between a benign and malignant ulcer.

Gastric analysis :—Augmented histamine test may reveal normal or low levels in Gastric Ulcer. This is not helpful to differentiate between a benign and malignant ulcer ; Unless the patient has no acid whatsoever following the administration of a maximal stimulus which clinches the malignancy.

Gastric cytology :—This is very useful in differentiating benign from a malignent lesion. If the cellular material is carefully obtained and rapidly fixed, an experienced cytologist can often tell whether an ulceration is benign or malignant. Malignant cells are more deeply staining than normal, show more mitotic activity and have longer nuclei. The absence of malignant cells in cytologic material does not of course rule out a gastric malignancy.

Gastroscopy often enables one to distinguish clearly between benign and malignant ulcers. Certain features such as undermining of the ulcer, irregularity of its margin, the presence of a greenish necrotic exudate and evidence of infiltration around strongly suggest that the lesion is malignant. A benign lesion has clear sharp margins, is round or oval in shape and containing yellowish white base. Gastroscopes enable the examiner to take multiple direct biopsies of the ulcer and photographs.

In spite of all these, malignant ulcer may not be detected. One has to resort to trial therapy. Trial therapy is necessary whenever a patient with gastric ulcer is found to have no certain evidence of gastric malignancy, following the procedures outlined. The patient is placed on intensive therapy and re-X-rayed after three weeks; if the ulcer has not decreased or if the patient is still having ulcers symptoms, operation should be advised.

Treatment :—(1) Randomised controlled studies reveal that hospitalisation of patients with gastric ulcer has a beneficial effect. Consequently hospitalisation will not only provide opportunity for the adequate work up of the patient but will also permit supervision of medical therapy.

(2) Antacid syrup liberally. The rationale of this therapy is in the protection of diseased gastric mucosa from destruction by normal or even subnormal quantities of acid and pepsin.

(3) Carbenoxolone Sodium (Biogastrone) which is normally present in the liquorice extracts (commonly known as *Athimathuram*) given to ambulant patients in a dose of 100 mg. *t.d.s.* has been shown to be as effective as bed rest in healing a gastric ulcer. The disadvantages are the side effects of salt retention and potassium loss which in the elderly may precipitate heart failure. This drug is ineffective if combined with a potassium retaining diuretic. An alternative liquorice preparation which is devoid of Glycerizinic acid is incorporated into an antacid tablet, Carid-S, in a dose of two tablets three times a day does not have these disadvantages and probably as effective as carbenoxolone sodium.

Surgical treatment :—Surgery is advocated in gastric ulcer patients in whom there is no radiological evidence of healing demonstrated after a four weeks' course of medical treatment or in whom there is suspicion of a carcinoma.

The operation that is performed is usually a partial gastrectomy, often a Billroth I type which involves a gastroduodenal anastamosis.

Conclusion.—Peptic ulcer is a common disorder. The break in mucosal continuity may result either from increased acid-pepsin secretion or from decreased mucosal resistance. The ætiology of gastric and duodenal ulcers seems to differ in that gastric lesions appear to depend more on reduced mucosal resistance, whereas duodenal ulcers are more dependant on hypersecretion. The diagnosis is established by history, physical examination, radiography and endoscopy. Hæmorrhage gastric retention and perforation are common complications of peptic ulcer. A gastric ulcer presents a special problem in that a distinction must be made between a benign and a malignant lesion. Proper therapy of peptic ulcer depends on understanding and being able to manipulate predisposing factors effectively. The treatment of gastric ulcer with Liquorice (*Athimathuram*; Glycerriza) derivative Carbenoxolone Sodium is also discussed.

PREVENTING INFECTIOUS HEPATITIS

Q. What protection can be given against infectious hepatitis to travellers in developing countries?

A. Infectious hepatitis is transmitted by person to person contact, the fæcal oral route being the most important. It is impossible to prevent spread of the disease even in countries with good sanitation and high standards of personal hygiene. Visitors to developing countries, however, cannot expect to escape the virus by segregating themselves in hotels. There is no method of active immunization against the virus. The traveller should therefore maintain high standards of personal hygiene and if he has not previously contracted infectious hepatitis he should receive passive immunization with purified gammaglobulin. The The dose is 500-750 mg intramuscularly repeated every six month during the visit. Gama globulin (immune serum globulin) will prevent clinical disease but it may not suppress inapparent infection and so long standing active immunity may thus be obtained.—(*British Med. Jour.* 10-5-1975).

DANGERS OF SILENT GALL STONES

Many of these stones are symptomless and are discovered only because some are radio opaque and may be seen on a plain X-ray film of the abdom done for some other purpose; or they may be felt at laparotomy or noted at necropsy. Today more and more calculi are being discovered in extensive "executive check up," which may include barium studies and cholecystography. The management of these silent gall stones depends on a knowledge of their natural history; what risks are there of the development of any of the well known complications of gall stones, and does the association between stones and cancer of the gall bladder present a serious risk to these patients?

After a further ten years, half (49%) had remained asymptomatic or had only had mild symptoms, while the rest had developed the full range of complications. Attacks of colicky pain had occurred in 254 patients (33%) leading to elective surgery in 173 cases. Of the remaining 144 patients 59 had developed jaundice or pancreatitis or both; 81 had had attacks of cholecystitis, and 7 had died; 3 patients had developed cancer of the gall bladder and one patient had developed obstruction. The incidence of complications was distinctly higher in those patients who were 60 years or more at the time of the primary cholecystography.—(*Brit. Med. Jour.*, 22-2-1975).

SURGERY FOR PEPTIC ULCER*

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INTRODUCTION :—Treatment of uncomplicated peptic ulcer is primarily medical, while that of complications is surgical. To discipline oneself to taking timely and bland food, chewing antacid tablets by the clock, switch off the current of mental worry and forego the pleasures of at least occasional smoking, drinking or eating one's favourite spicy dish is what the physician demands from his patients. Therefore, many patients who could get cured if they follow their physician's instructions carefully, turn to the surgeon for quicker relief. The surgeon has a variety of operations up his sleeves for the various types of ulcers and patients. The type of operation is dictated by the type of ulcer, age and sex of the patient and the results of various pre-operative tests and also by the surgeon's own inclination towards a particular operation. There are surgeons who measure their success in terms of stomachs removed and others who keep counts of vagal nerve fibres excised. The right approach seems to be, operations depending on sound physiological basis, supported by long term good results. Good result is measured not only in terms of freedom from pain and absence of recurrence of ulcer, but also absence of other undesirable and troublesome sequelæ.

The physiological basis of surgery :—"No acid—no ulcer"—peptic ulcer does not occur in the absence of acidity while the majority of duodenal ulcers are associated with high acidity. Acid and pepsin are secreted by the parietal and chief cells of the body and fundus of the stomach respectively.

The stimulus for acid production :—The stimuli are finally mediated through :—(*i*) the vagal nerve fibres and (*ii*) the hormone called 'gastrin' produced in the antrum or distal part of the stomach.

Vagal stimulation occurs through nervous influences like taste, sight or thought of food and even occurs at night during sleep, more so in high strung worrying Thomases. Vagus is also the motor or emptying nerve of the stomach. Gastrin, on the other hand, is produced by almost anything which enters the stomach and distends it, high acidity having an inhibitory effect on hormone production.

The basis of surgery in peptic ulcer is to abolish the nervous or hormonal phase of gastric secretion by vagotomy or antral resection or by reducing the parietal cell population itself by resecting part of the stomach.

When surgery?—Dissatisfaction with the prolonged and almost military discipline demanded of a patient under medical treatment and repeated resurgence of symptoms prompts a patient to turn to quicker avenues of relief. Surgery is one such method. Surgery is mandatory when there are complications like perforation or mechanical obstruction. The indications for the use of the knife are briefly as stated below :—

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*Specially contributed to the 'ANTISEPTIC'.

(*a*) Failure of, or dissatisfaction with medical treatment, (*b*) Recurrence of symptoms under medical regime. Repeated episodes of symptoms over a period of a few years is an indication for surgery, (*c*) Complications like perforation and obstruction are emphatic indications for surgery. Hæmorrhage needs surgery under certain circumstances, (*d*) Double ulcers—a gastric ulcer complicating an already existing duodenal ulcer.

Gastric ulcer :—(*e*) Failure of medical treatment ; (*f*) suspicision of malignancy especially in a prepyloric ulcer and (*g*) double ulcer.

What surgery ? *Vagotomy and Drainage* :—The pendulum has swung towards a more conservative approach in surgery for peptic ulcer in recent years. For the majority of chronic duodenal ulcers in our patients, a total abdominal vagotomy, as introduced by Dragstedt (1943, 1948) combined with gastrojejunostomy is a good operation. By and large, this is preferable, to partial gastrectomy particularly in younger individuals or patients belonging to the middle and lower socio-economic groups. This is because of the nutritional and metabolic complications following gastrectomy especially in our patients whose staple diet is rice and is low in proteins. Vagotomy of the stomach, to be effective, should be complete; this is not difficult at the hands of experienced surgeons. Gastroenterostomy must be adequate and the anastamosis designed in the most dependent part of the stomach so that antral stasis does not occur. Although many of us favour gastroenterostomy as the drainage procedure with vagal section, some favour pyloroplasty as being more physiological. But comparative studies have not shown the superiority of either one over the other. Complications and recurrence of ulcers *do* occur after vagotomy and drainage. Therefore, in search of a better operation, Burge popularised *selective vagotomy* denervating only the stomach and preserving the nerve supply of other abdominal organs. Recently, Johnston and Wilkinson (1970) have introduced proximal gastric vagotomy or *highly selective vagotomy* as a logical improvement. This technique does not denervate the antrum and therefore, antral motor activity and drainage are unimpaired. Hence, gastreoenterostomy or pyloroplasty is unnecessary. The highly selective vagotomy may be the final answer : but time alone can tell !

Partial gastrectomy :—Is still favoured by some because the results in terms of recurrence and other complications compare favourably with other methods when the operation is performed in patients whose diet is of good quality. It is definitely one of the methods in patients with double ulcers *i.e*, gastric (stasis) ulcer complicating a chronic cicatrising duodenal ulcer. A total gastrectomy may very rarely be indicated in persons with an extra-ordinary stimulus for acid production as in Zollinger-Ellison Syndrome.

Gastric ulcer :—Double ulcers (*i.e*, Duodenal *plus* gastric stasis ulcer) do equally well with vagotomy in one of its variations combined with a drainage procedure. Gastric ulcer in the body of the stomach are usually associated with normal or low acidity; the ideal surgical procedure is partial gastrectomy. Prepyloric ulcers if proved innocent, respond very well to vagotomy and drainage. But, that it has not turned malignant, has to be proved by four quadrant biopsy or even excision of the ulcer alone and frozen section-examination at operation. If there is evidence of malignancy, a radical lower partial gastrectomy gives very good results, as compared to other types of gastric malignancies.

Complications.—*Perforation* :—To treat an established case of perforation by means other than surgery is an error unless the patient is moribund. Acute ulcer perforation needs laparotomy and closure of perforation. On the other hand, in a patient with a prolonged antecedent history of ulcer perforation, closure should preferably be combined with definitive surgery for the chronic ulcer also. This will mean vagotomy and drainage in most cases.

Pyloric obstruction :—Once cicatricial obstruction occurs it must be relieved by surgery. The importance of prolonged and adequate pre-operative preparations of the patient and his stomach cannot be overemphasized. In many of our patients particularly those over 45 years, gastrojejunostomy alone has been found to give lasting relief. But in younger individuals, it is better to ensure against recurrence by the addition of vagotomy.

Haemorrhage :—Hæmetemesis or melena or both, indicating a bleeding peptic ulcer is initially treated by antacids, sedatives coagulants and blood transfusion. Indications for emergency surgery are failure of non-surgical measures, severe catastrophic bleeding (indicating erosion of a large vessel wall) and bleedings in patients over 45 years of age, with evidence of atherosclerosis. Surgery for bleeding ulcer should be as expeditious and atraumatic as possible. Simple measures like underrunning the bleeding vessel, suturing the ulcer with or without vagotomy and drainage are the favoured methods. Rarely gastrectomy may be necessitated by diffuse oozing of blood from the greater part of the stomach.

Recurrent ulcers :—The ideal policy in the treatment of recurrent ulcer is an open question. Recurrence indicates inadequacy of the original operation or improper selection of the operation. Therefore, a thorough re-evaluation including acid secretion studies is indicated.

In a patient who has undergone vagotomy and drainage, recurrence may indicate incomplete vagotomy. So one could repeat the vagotomy preferably through virgin transthoracic approach. Alternatively, a high gastrectomy finds favour with many surgeons. Recurrence following partial gastrectomy calls for addition of vagotomy with sometimes a high revision resection of the stomach. One other possibility in cases of intractable peptic ulceration is the rare, but much talked about Zollinger-Ellison syndrome.

Summary :—The ideal operation for peptic ulcer has not yet been evolved. One has to evaluate the patient carefully in those considered for surgery and select the proper operation for the patient. The trend in recent years is, conservatism, although a real superiority of conservative operations like vagotomy and drainage over radical operations like gastrectomy has not been proved. The introduction of the highly selective vagotomy, which does not need a drainage procedure, appears to be a move in the right direction. Another threat posed by Neuro-surgeons is that they may selectively knock off the "acid secreting centre" in the brain by sterotactic surgery and snatch away the bread and butter of the General Surgeons ! But where exactly is this centre in the brain ?

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SODIUM RESTRICTION AND THIAZIDE DIURETICS IN THE TREATMENT OF HYPERTENSION

In a group of hypertensive patients it has been shown that moderate sodium chloride restriction has a hypotensive effect that is similar to that produced by thiazide diuretics. Blood-pressure changed in relation to body weight in individual patients and appeared to correlate with their sodium balance. The more a patient was depleted of sodium the lower was the blood-pressure.

The serum potassium level fell with the use of thiazide diuretics but in this group of patients there was little change in total body potassium content. The fall in serum potassium level appeared to relate to a shift into the cells due to the accompanying alkalosis. Potassium supplementation appeared to have had little effect and was unnecessary for most patients who were given diuretics for hypertension. *Amiloride* corrected the alkalosis and restored the serum potassium level to normal. —(S. Orney *et al. The Med. Jour. of Australia,* 28-6-1975).

HONEY

Q. Honey has been reported as being useful in preventing atherosclerotic disease. Is there any evidence for this claim ?

A. The literature about honey must be as extensive and as illsupported as that about yoghourt in its prophylactic and curative properties. There is nothing whatever to support any of these claims either for atherosclerotic disease or for any other disease.—(*Brit. Med. Jour.,* 25-1-1975).

MANAGEMENT OF UPPER G. I. BLEED*

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It is a very common sight to note people rushing in to help those losing blood, externally. It need not necessarily be a massive bleed following an accident. It is also a familar sight at hospitals and clinics for people to rush in with a large plug of cotton to apply pressure even over a trickle from an injection site, the aim of the latter, being to apply local compression, an effective way of stopping the ooze. Unfortunately the same enthusiam to stop and arrest the bleed is never universally evinced when a patient has a possible internal bleed, particularly in the G. I. tract! While no reliance is attached to Vit. K., Calcium gluconate and other coagulants in situations such as those narrated above nor in cases of ruptured ectopic gestation, faith and hopes on Vit. K. etc. tend to be over-relied upon even in the presence of massive internal bleed, unrelated to any clotting factor deficiencies. It is unfortunate that some persons who could be saved by early aggressive surgery sometimes die even without blood transfusion mainly because massive internal bleed had not even been suspected. A very important factor for this complacency may be, the fear, as well as the fact, that one may be no wiser even at laparotomy, even during the active bleed itself, to detect the site of the bleed. Notwithstanding these limitations, it is important, that one should be able to decide early upon the site and cause of bleeding, the necessity or otherwise for bleed replacement including the amount required as also the desirability of early surgery.

Aetiology:—The common causes of upper alimentary tract bleed in any General Hospital be it urban or rural are usually: —Peptic ulcer; portal hypertension; drug induced (aspirin, steriods, phenyl butazone, etc.); alcohol induced bleed; gastric neoplasm and unexplained factors.

This does not mean that there are no other causes for massive haematemesis or melena. This is a very important medical emergency requiring close rapport between the physician and surgeon, Blood-bank Medical officer, Radiologist, not to belittle the important role of nursing and paramedical staff. Indeed the person who sees the case first has greater responsibility.

The several causes of upper alimentary tract bleeding are:—(1) Chronic duodenal ulcer, (2) acute gastric and duodenal erosions and erosive gastritis, duodenitis, (3) drug-induced such as due to aspirin, phenyl butazone, corticosteriods,

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*Specially contributed to the 'ANTISEPTIC'.

indomethacin, serpentine group, anticoagulants, etc), (4) Chronic gastric ulcer—more so the giant ulcers in relation to gastric stasis, (5) œsophageal varices in relation to portal hypertension - generalised or segmental, (6) peptic ulcer at other sites such as anastomotic ulcer, œsophageal ulcers and ulceration around Meckel's diverticulum, (7) tumours of the stomach - benign or malignant, (8) bleeding states such as purpura (thrombocytopænic or non-thrombocytopænic); haemophilia; Von Willebrand disease, leukæmia and Pseudoxanthoma elasticum, (9) hiatus-hernia and reflux œsophagitis, (10) partial tear of the œsophagus during attempts at violent retching or vomiting (Mallory Weiss Syndrome), (11) malignant hypertension, (12) chronic renal disease, (13) diverticular disease of the alimentary tract particularly a duodenal diverticulum with peptic or non-peptic ulceration, (14) local vascular lesions such as angiomas, telangiectasia, aneurysms, (15) reflex to systemic infections, acute neurological and cardiac disorders, burns (Curlings ulcer) etc, (16) pancreatitis and pancreatic neoplasms, (17) miscellaneous including spurious and fictitious hæmatemesis.

It is very important to know for certain whether the patient has had hæmatemesis or hæmoptysis. A very ready method when the patient comes with such a doubtful history is to ask him or her to cough and note whether the patient brings out any sputum grossly blood-tinged, which will readily place the cause as haemoptysis. This is exclusive of various routine differences frequently mentioned in text-books between hæmatemesis and hæmoptysis. Nasogastric intubation will of course unmask even silent massive G. I. bleed, the bleed no longer ignored or missed, the internal bleed now obvious externally. Incidentally this will help to pick out cases of fictitious or spurious hæmatemesis. It is not uncommon for certain hysterical individuals as well as malingerers to mix apparent vomitus and food materials with colouring agents or blood from some other source and bring it to the unwary nurse, attendants or even medical officers as the vomited material. But the gastric aspirate soon after the patient brings that material will reveal only clear fluid or food taken recently without any trace of recent or past bleed in the stomach. Such patients will then readily admit the cause for their resorting to this procedure and get either discharged or consent to undergo treatment from a Psychiatrist. One should also make sure that the bleed is not from a huge angioma in the posterior part of tongue or in the pharynx itself.

Case history :—Realising the importance of this clinical emergency a set pattern of procedures can be adopted with awareness to change as and when circumstances require, similar to the problem of postpartum hæmorrhage. As a first step a proper history-taking is desirable either directly from the patient or from any attendants, who come along with the patient. There may be a history of dyspepsia suggestive of peptic ulcer or the patient may say that he has been swallowing ulcerogenic drugs like aspirin, etc. It is strange that there is no correlation between the dosage of these drugs and the severity of the bleeding.

It may be astonishing to note that nearly ten factors have been attributed to the mechanism contributing to gastro intestinal bleeding following aspirin ingestion. Basically, they involve the decreased mucosal resistance, local erosion and ulceration ending up in bleeding. These include mucus denaturation; epithelial desquamation; focal mucosal necrosis; hypothalamic pituitary adrenal systemic disturbances involving secretion of HCl. and changes in mucus; allergic hypersensitivity including increased capillary fragility, thrombocytopenia and decreased platelet adhesions; hypo-prothrombinæmia and possibly other hæmorrhagic mechanisms. Many more may be added in future!

Family history of a bleeding tendency, as well as a tendency for spontaneous bleeds such as previous epistaxis, hæmatemesis, hæmoptysis and easy bruising should be ascertained. While it is possible for a planned surgical procedure such as appendicectomy or other laparotomy to pass off without any untoward sequelæ, very few patients with bleeding diathesis will have uneventful dental extraction, tonsillectomy, ritual circumcisions or endometrial curettage. It may be a good working rule that a person who has gone through any or many of the above procedures uneventfully is unlikely to have gross bleeding diathesis.

Clinical examination:—The sudden black-out, severe postural hypertension (very important to record B. P. both in the horizontal and upright postures) pallor in the absence of kailonychia and features of chronic anæmic state may be pointers to severity of blood loss. Restlessness, altered level of conciousness, tachycardia and tachypnœa reflect the severity of bleed. One must carefully look for telangectasia, vascular spiders, ecchymosis, purpura, undue wrinkling of skin over neck and flexures (pseudoxanthoma elasticum), superficial lymph node enlargement, prominent veins over the abdomen and hepatosplenomegaly. It is not always that a patient with portal hypertension has bleeding from varices. Indeed many times the cause of bleed in a patient with portal hypertension may be from coincidental œsophagitis, gastritis, duodenitis or peptic ulcer. Apart from taking blood pressure both in the lying down and upright posture to detect the labile vasomotor response, it is desirable as a routine to use the B. P. cuff for assessing the capillary fragility by doing the Hess test.

Laboratory investigations :—The routine laboratory investigation should start even in the casualty or wherever the patient is first seen in the hospital. It may be a good working principle to have a ready investigation and progress chart with time sequence carefully recorded for every patient with G. I. bleed. The routine laboratory investigations should start by taking a peripheral blood smear which should serve to exclude leukæmia, abnormality in platelets and excess roleaux formation associated with multiple myeloma, *Hb.* level and PVC must be estimated and blood sent for grouping and cross matching irrespective of the severity of the bleed.

One should always be aware that sometimes marked reflex vasoconstriction in the skin and splanchnic areas may prevent the B. P. from falling down and indeed may be even high for a short time after the bleed. A sudden rise in B. P. with restlessness, in a previous normotensive who has bleeding, is more dangerous that a patient with apparantly normal B. P. or mild hypotension.

The principles of managements :—It is very vital that even initially one should sort out bleeding oesophageal varices from other causes of G. I. bleed. It is very important, not only because brisk haematemesis in portal hypertension predisposes to further hepatocellular damage, and hepatic coma but also because ot the dangers of inadvertent use of morphia and other depressants in such conditions. The management of bleeding varices will be dealt with separately from bleeding from all other causes. The following can be a ready working procedure in patients with G. I. bleed other than those with liver disease.

The principles of management of non-variceal bleeding particularly for bleeding peptic ulcers :—(1) Reassuring the patient and ensuring sedation/tranquility. Even morphia may be required. Usually diazepam 5-10 mg. parenterally or barbiturates parenterally may be sufficient.

(2) An intravenous drip must be immediately started initially with normal saline. This is very important as soon as the patient comes with a major bleed as it may be difficult to get the vein later and much time may be wasted in getting the vein even by outdown at a later time. Blood transfusion must be started quickly, if there is evidence of significant fall in circulating blood volume. Currently, the only practical means of re-establishing and maintaining adequate oxygen requiring capacity of the tissue is through transfusion of whole blood. In certain massive bleeds it may be necessary to give as much as 5-10 units within 12 hours. The purpose of prompt transfusion is to ensure adequate hæmoglobinisation after the original bleed.

Though sometimes it may be a good principle to wait and watch and allow nature to assist the bleed store to replenish the amount lost, such as after voluntary blood donation, the situation here is very different. It is more often a rebleed that kills the patient rather than the initial bleed. It may be something like pilot-angina as before massive infarcts!. Special care must be taken about bleeds associated with acute exacerbation of ulcer symptoms particularly with disturbing backache. It will be dangerous to ignore such warnings. It is safer to hospitalise such patients even though there is a stable vasomotor response without any outward effects of depletion of circulating blood volume or evidence of anæmia, pallor, or anoxia. The purpose of replacing the blood loss early is largely with hopes to make the patient be in a fit state to withstand even further bleeds without suffering from adverse effects of severe anoxia. This is the main indication for even smaller units, which some may say, would not have really saved the patient! The necessity of early blood replacement is more so in elderly patients with atherosclerotic vessels. However one really wishes that all donors have been screened earlier for Hb. Ag.

(3) While initially cryptic comments have been made in this article about over-reliance on coagulants and other factors concerned with clotting mechanisms it must be admitted that there is a special risk with massive transfusions which may predispose to "citrate intoxication." This is *the* indication for administering calcium gluconate intravenously *but not instead* of blood-transfusion! This calcium gluconate must be given through a separate vein and not through the one, through which the blood is on flow.

(4) It may be a good working rule atleast in a patient with massive bleed to have two access lines to the venous system through drip sets at two different veins.

(5) It will be ideal to pass a nasogastric tube and empty the stomach contents. The risk of passing Ryle's tube is unfortunately over-magnified. It is desirable to have it passed as early as possible to help.

(*a*) To confirm bleeding, (*b*) to note whether it is fresh blood or altered blood, (*c*) whether there is any recurrence of bleeding, (*d*) to facilitate lavage, (*e*) for intragastric medication. Simple ice water lavage is a very ideal procedure. Some do add adrenaline and anticoagulants to the lavage fluid.

(6) *Feeding* :—There is no harm in initiating early bland feeds if there is no brisk feed. The patient can have milk or glucose water admixed with electrolytes such as "Electral power" by mouth. Intra-gastric milk drip is ideal if there has been a recent history of an acute exacerbation of peptic ulcer. Antacid liquid gel, like Aluminium hydroxide gel can be given in

doses of 2 to 4 teaspoonfuls every 2 hours, not only for its antacid action but also its antipeptic activity.

(7) *Carbonoxolone* :—Carbonoxolone and/or liquorice derivatives are very helpful. This is particularly so in patients with gastric ulcers; gastric erosions and drug induced haemorrhagic gastritis including those precipitated by alcoholism and in those with Viral hepatitis with haemorrhagic Gastritis. These drugs have direct action on the mucous membrane, making the cells live longer, regenerating cells stick to the basement area more stably and also prevent back diffusion of H-ions.

(8) *Other Procedures* :—Vitamin C, vit K, Calcium gluconate and other coagulants including those derived from snake venoms and patent preparation such as coagulent (ciba); clauden; styptochrome (containing adenochrome); Promarin; Botrapase (Jaggat pharmaceuticals), etc., can all be used in addition to but not exclusive of the measures outlined earlier.

(9) *Surgery* :—There should always be close rapport with the Surgeon whenever there is a case of alimentary bleed even in the medical ward. It is possible that bleeding from most acute ulcers, erosive gastroduodenitis and oesophagitis, duodenal ulcer bleeds and bleeds due to local vascular disorder and even those with bleeding diathesis may stop spontaneously particularly with the treatment schedule outlined earlier. But should there be an operable and eradicable cause such as angioma, tumour, or large stasis gastric ulcer particularly, those rebleeding after admission, these patients may be taken up for surgery. Where facilities exist earlier ward barium studies, endoscopies; visceral angiographic and certain other screening tests such as "string test" after a parenteral flouresceine injection should be comtemplated before taking up the patient for surgery. Such patients may even require partial or subtotal gastrectomy. Blind gastrectomy should be strongly condemned if source of bleeding cannot be detected, for, it is not uncommon to realise later that the source of bleeding might have really been from the biliary passages or pancreatic duct or even small intestine.

It is not uncommon for an alert, enthusiastic surgeon to demonstrate a stiff, partly torn, atherosclerotic vessel expelling blood like a jet from the floor of an ulcer, which bleeding could not have been arrested other than by direct approach on the vessel at Surgery. Some patients may be noted to have not only bleeding from the ulcer but also a perforated ulcer when the patient has had the luck to have surgery done. This is particulary common in patients who are elderly; those who are on corticosteriods or other ulcerogenic drugs; and in whom there has been constant backache or ulcer pain along with the G.I. bleed.

The management of bleeding varices in portal hypertension :— It may be classified as for that in an Emergency or for elective surgery.

Opinion is divided as to whether the mere demonstration of portal hypertension without bleed in an indication for modern surgery. This is mainly because of the failure to assure prevention of bleed after surgery, not to mention of the inadvertent risks of surgical procedures *per se* However the development of safe and newer surgical techniques of selective decompression of potentially dangerous collaterals such as those in the submucosa and mucosa of the œsophagus and stomach ; the fear of hypersplenism and rupture of enlarged spleen ; and lack of availability of facilities for emergency control of bleed in patients while in fields, rural areas and areas of work are strong points for reviewing the role of even prophylactic surgery.

For the present, discussion will be restricted to emergency treatment for bleeding œsophageal varices. It is needless to repeat that *Hb*; PCV; blood grouping and cross matching; coagulation time; bleeding time and prothrombin time must all be performed immediately. Where facilities exist, central venous pressure monitoring must also be done in all patients with massive blood loss due to any cause, be it variceal or nonvariceal. In patients who are not having proven ischemic heart disease it is wiser to try pitressin 20 units in 100 cc. of 5% glucose intravenously, given within a period of 10 minutes, as soon as possible. A separate intravenous drip must be started at a different site with 5% glucose which must soon be changed over to fresh blood transfusion. A bed pan must always be kept ready by the side as Pitressin induces brisk intestinal peristalists and the patient will evacuate the bowel. If this does not happen, the drug is probably not acting. It is needless to stress that the common posterior pituitary extract that is available in the market here is not the same as Pitressin The former is available for its use in obstetrics for its Oxytocic action and not for the Pitressin effect. Luckily, by chance, it does contain traces of vasopressin as a contaminent.

Pitressin should always be kept in a refrigerator. It loses its potency with age and on exposure to varying temperatures Pitressin, apart from the action of diminishing the bleed from varices has the added advantage of emptying the gut of protein rich blood which aggravates the impending hepatic coma. To avoid its adverse action on the Coronary vessals, this drug can be infused directly into the cœliac and mesenteric arteries at selective catheterisation as in visceral arteriography, as an emergency procedures. It may be feasible at centres such as the Barnard Institute of Radiology Madras which has the largest experience in visceral arteriography in India.

Sengstaken tube is a life saving procedure but it is very important to ensure that it is (*a*) properly positioned (*b*) the patient is not too restless when being intubated. It is not uncommon to visualise a patient pulling out the tube with the inflated gastric balloon in position while restless, tearing the œsophagus completely and choking himself not only with the tube but also with the blood. Sengstaken tube may not be desirable in those who have grossly deformed nasal septa and large adenoids preventing the passage of the tube through nostril as also those with very poor respiratory reserve. Though it may be feasible to have it passed through mouth, it is not quite desirable. In routine practice it is sufficient to distend the gastric balloon only. It would be wise to avoid distending the œsophageal balloon as a routine.

Gastric cooling acheived by ice water being constantly siphoned out of the stomach is worth a trial. Carbanoxolone and liquorice derivaties are worth using when the gastric return clears. It is very important to impress on the nursing staff, attendants and the patient not to permit anything by mouth while the tube is in position.

Sedation :—Morphia is contraindicated. There may be compelling necessity to use some drug to quieten the patient and /or to facilitate intubation Diazepam 5—10mg. parenterally is the safest under such circumstances.

Surgery :—Emergency surgery consists of ensuring portal azygos disconnection and the best procedure will be the one devised by late Padmashri Professor C.S. Sadasivam, a pioneer, not only in Cardio-thoracic surgery but also in Surgery for portal hypertension. He was the first to report on successful surgical attack on portal hypertension from India, at a National Conference. His procedure is a modification of Tanners operation which can possibly be carried out even in patients who are relatively poor surgical risks and even at peripheral centres by a junior surgeon.

G. I. Bleeding.—(1) Mental State; (2) Pulse; (3) B.P.—supine upright (4) CVP; (5) Gastric lavage; (6) Fæces; (7) PCV; (8) Total concentration (9) Blood urea; (10) Blood creatinine; (11) Prothrombin time; (12) Bleedin time; (13) Clotting time; (14) Blood electrolytes; (15) Diaphoretic procedure; (16) Barium study—Ward Barium study; (17) Fibrous Endoscopy (18) Angiography; (19) String test; (20) Parenteral intramuscula replacement; (21) Blood intravenous fluids for pharmacological therapy (22) Tamponade; (23) Gastric cooling; and (24) Surgical opinion an procedure.

Summary.—The early detection and efficient management of massiv upper alimentary bleed is very important because it frequently affects eve relatively young patients in their prime of youth and those whom not onl their family but even the country may not like a lose. It will be a traged if a patient with surgically treatable cause of bleed such as local ulcerate gastric lesion is just allowed to die without being given a fighting chance surgery.

While the need for surgery is emphasised it does not belittle the need for prompt detection of bleeding diathesis including leukemias, as also spurious hæmatemesis and bleed from tongue and pharynx, etc., before passing on the case to the surgeon for an emergency abdominal or abdominothoracic surgery. In a problem case of bleeding, an alert consultant or experienced doctor while not being able to get at the cause of bleed from the case notes may be sometimes able to pick up the cause from the cupboard of the patient in form of drugs, dyes and devices for producing blood admixtures!

Acknowledgment.—We are grateful to Dr. N. Madanagopalan, Physician and Gastroenterologist, Govt. General Hospital for his guidance and help in preparing this article. Our thanks are also due to the Principal, Madras Medical college and the Superintendant of the Govt. General Hospital, Madras for according permission to us to work in the Gastroenterology Department of the hospital and in Madras Medical College, Madras.

CHORIORETINAL LESIONS PREDISPOSING TO RETINAL DETACHMENT

That the prophylactice treatment of retinal detachment should not be lightly undertaken is demonstrated by a recent study by Hyams *et al.* This study is particularly pertinent in view of the temptation to use a comparatively easy method of applying prophylactic treatment by the use of cryotherapy.

The authors studied 873 untreated eyes prone to retinal detachment, recording all visible lesions and their progression, up to and including retinal detachment in 14 eyes. Some eyes had visible chorioretinal lesions when first examined, others were normal but were considered detachmentprone because they were fellow eyes of patients who had retinal detachment in one eye, because they were aphakic eyes with high myopia, or because of a recent history of photopsia or entoptic phenomena. The eyes were examined at least once a year for a period of one to six years. Over 1,000 chorioretinal lesions, including 246 retinal breaks, were found in the 873 detachment-prone eyes. Fourteen eyes developed retinal detachment and of these 11 were successfully re-attached. Thirteen of these detachments, were present and associated with a new break found in the course of examination. The fourteenth detachment occurred seven months after the discovery of the new break. The 246 retinal breaks found in flat retinae at the time of the initial examination were innocuous in their behaviour and none led to detachment. The authors are of the opinion that a retinal hole in a flat retina appears to be the end point of a degenerative process, never getting bigger, rarely causing retinal detachment and occasionally showing signs of repair in the form of pigmentation, even to the extent of the hole becoming invisible. They conclude that there is doubt about the ability to prevent most cases of retinal detachment. A surgeon performing prophylactic treatment according to generally acceptad criteria might have a prevented one of the 14 detachments in this series, but would have undertaken many unnecessary interventions.—(*The Medical Journal of Australia*, 8-3-1975).

VACCINE SPOILAGE AND VACCINE FAILURE

Several serologic surveys and outbreak reports have documented suboptimal poliomyelitis and measles vaccine performance. Vaccine failure has sometimes been attributable to mishandling. One recent Study, in which live virus vaccine from clinics and private offices was tested directly, showed that one specimen in five had become inactive during transport or storage in the community. In view of currently inadequate immunization level, which will be discussed briefly, mishanding of heat and light labile live virus vaccines takes on added significance. Vaccine spoilage is a problem which is easy to avoid. Guidelines for proper vaccine transport and storage are presented at the conclusion of this report.

The poliomyelitis immune status of children in the United States has been declining sharply over the past several years. This decline, which involves school age children and, most strikingly, preschool age children has been well documented by the annual national immunization survey conducted by the U. S. Bureau of the Census. In 1973 60·4 per cent of children one to four years of age had a history of three or more doses of poliomyelitis vaccine. In 1964, 78·6 per cent had been vaccinated with three or more doses.

The issue of vaccine efficacy is crucial in the face of the present immunization status of U. S. children, and optimal vaccine efficacy in the community clearly cannot be taken for granted. The Bureau of the Census reports that 64 per cent of children of ages one to four have a history of either natural measles infection or measles vaccination. Actual immune status must be lower, partly because measles vaccine, under optimal conditions fails to induce sero conversion in 2 to 5 per cent of vaccinations. Several measles outbreak investigations have identified many more cases of vaccine failure the expected purely on the basis of these optimal vaccine ineffectiveness rates.

Krugman *et al* looked more directly at the issue of vaccine spoilage. These authors determined infectivity titres of vaccine samples obtained from various public health clinics and from private practitioners. They compared these findings with infectivity titres of samples from identical lots stored at the Bureau of biologies and found a significant loss of potency in 19 per cent of the field samples tested. Twenty-nine per cent of the clinics sampled were using vaccine which did not have significant potency. Two trivalent oral poliomyelitis vaccine samples had no detectable live virus. Although transport and storage histories were also obtained, it was not generally possible to pinpoint the time or place of improper handling. It was, nevertheless, apparent that spoilage had occurred after the vaccines had been received from the manufacturer.—(Richard B. Borknow, *New York State Journal of Medicine*, February, 1975).

CHOLECYSTOSTOMY FOR ACUTE CHOLECYSTITIS

Cholecystostomy is an operation which is rarely performed nowadays except in an emergency situation. We have examined our experience with cholecystostomy during the period from 1963 to 1970, to assess the indications for and the results of this operation.

They found that the indications for cholecystostomy fell into three categories. In the first category were nine patients whose conditions deteriorated under conservative management and for whom a planned cholecystostomy was performed. In the second category were five patients for whom it was decided at operation to perform a cholecystostomy rather than a cholecystomy. In the third category were ill patients for whom a cholecystostomy was performed during a laparotomy for general peritonitis.—(*The Med. Jour. of Australia*, 29-3-1975, T. Pheils Murray).

PILES AND ITS MANAGEMENT*

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BLEEDING per Rectum is perhaps the most common anorectal complaint for which a patient seeks advice from a doctor. The most common cause of such bleeding especially in the 20 to 50 yr. age-group is hæmorrhoids or piles. This is due to the varicosity of the veins in the anorectum. The plexus of veins formed by the radicals of the superior, middle and inferior rectal vains are the once usually affected.

Classification.—Piles may be external or internal, depending on whether they are inside or outside the anal orifice. Simple inspection can differentiate one from the other. If it is covered by the skin then it is the external variety, if it is covered by the mucous membrane it is of the internal variety. If both co-exist then they are known as interno-external hæmorroids

Haemorroids may be a primary lesion or secondary to some other condition. This fact must always be kept in mind, so that one may not miss some underlying serious pathology or institute treatment when not really indicated. I shall illustrate this statement with a few examples :

1. In carcinoma of the rectum, due to compression and thrombosis of the superior ractal vein, haemorroids occur. It occurs frequently enough to warrant routine rectal and proctoscopic examination and if necessary a sigmoidoscopic examination as well especially in persons over fifty. Hence if the primary pathology is diagnosed sufficiently early then the chances are high for a completely cure. Rectal growths are fairly slow growing, it is easy to do a cancer clearing surgery for these people.

2. In pregnancy, haemorroids is a very common accompaniment, this being due to two reasons-one because of the compression of the superior rectal vein by the gravid uterus and because of the smooth muscle relaxing effect of progosterone on the wall of the veins. In the majority of instances all that is required is symptomatic treatment. The patient is advised to keep her bowel soft, by taking fruits especially bananas, greens and fresh vegetables. If necessary a mild laxative may be prescribed. If bleeding is not controlled, then the patient may require an injection into the piles of a sclerosing solution, the technique of which will be described later. In a large number of patients the hæmorroids resolve after childbirth, so no drastic treatment is required during pregnancy. If thrombosis or prolapse occurs, surgery may be required but it can usually be deferred till after childbirth except in very rare instances.

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*Specially contributed to the 'ANTISEPTIC'.

3. Stricture of the urethra or enlarged prostate may cause hæmorroids. A careful history followed by an examination of the genitalia and rectal examination will help in the diagnosis and treatment of the primary condition.

4. In portal hypertension hæmorroids are stated to occur but it is still controversial. Many authors who have worked on portal hypertension have not found this to be a common finding.

The above variety constitutes only a small percentage (*i.e.*,) less then 2% of piles. The great majority belongs to the primary type. Again internal is more common but because of inter-communicating veins the interno-external variety may be present.

Primary Hæmorroids.—*Aetiology* :—Hereditary type is present in the members of the same family normally due to abnormally large sized arteries, which supply the rectum or congenital weakness of the walls of the veins. It is common to find that varicose veins of the legs frequently accompany piles.

Anatomical :—(1) Veins pass through muscular tissue so they may get constricted, when the muscles contract during defæcation, (2) Lack of support to the radicles of the superior rectal vein in the very loose sub-mucuous connective tissue, (3) Lack of valves in the superior rectal veins as they belong to the portal system. Straining due to constipation or purging predisposes to pile formation and acts as an exciting factor.

Morphology :—In quadrupeds there is a hindrance to the return of venous blood from the ractum, so lack of blood is of no consequence. But in man the weight of the column of blood unassisted by valves in the lower part of the rectum may be considerable and does not exist anywhere else in the human body. This may be further aggravated by straining. Our Indian method of squatting while defæcating is more anatomically oriented than "the Western closet" position.

Pathology :—Internal pile mass is present in three groups 3 O' clock, 7 O'clock and 11 O'clock positions in the lithotomy position :—the left lateral, right posterior and right anterior tributaries of the superior rectal veins respectively. In between, several smaller subsidiary tributaries occur.

Each pile has three parts :—(1) The pedicle—situated in the rectum just above the anal ring, (2) the internal hæmorroid, which commences at the ano-rectal ring and ends at the dentate line and (3) an associated external hæmorroid lying in between the dentate line and the anal margin.

Clinical features.—(1) *Bleeding* :—Is the first and most important symptom and at the outset it is slight, occurring during defæcation, and bright red in colour. It may go on for months or years like this, unless some complication supervenes.

2. *Prolapse* :—Is a much later symptom. In the beginning protrusion is minimal and takes place only at defæcation and reduces by itself.

3. *Discharge* :—Some mucoid discharge is present in most cases, especially in the second degree.

4. *Pain* :—Uncomplicated piles is seldom painful.

Diagnosis.—*Inspection* :—Third degree piles can be made out easily by the presence of a prolapsed mass. If the patient is asked to strain, 2nd degree piles will come into view. First degree piles can be made out only by a proctoscopic examination.

Palpation :—Unless the internal piles are thrombosed, no significant finding can be made out.

Proctoscopy :—Is a *must* in all cases of bleeding per rectum. After introducing the instrument to its fullest extent-as the instrument is withdrawn, the hæmorroids will bulge into the lumen of the instrument, if piles are present.

Complications.— 1. *Profuse bleeding* :—Occurs frequently especially in the 2nd degree varieties.

2. *Strangulation*:—When prolapsed piles are caught by the external sphincter. Here again the 2nd degree is affected more. The patient is siezed with a sudden bout of severe pain. If the mass is not replaced in an hour or two the whole mass gets œdematous and becomes extremely uncomfortable to the patient. Reduction also may not then be possible. Even if reduction were possible the mass prolapses again when the patient passes flatus, coughs, laughs, etc.

3. *Thrombosis* :—When thrombosis occurs the prolapsed pile mass becomes reduced in size after this.

4. *Ulceration* :—Of the exposed mucous membrane especially if strangulation or thrombosis is present.

5. *Gangrene* :—If the strangulation is severe enough to constrict the arterial supply of the hæmorroid, gangrene occurs.

6. *Fibrosis* :—When thrombosed piles become fibrosed it gets converted into a fibrous sheet.

7. *Suppuration*—Is rare, occurring occasionally and resulting insubmucous abscesses.

8. Pyelephlebitis (portal pyæmia) is a rare complication.

Treatment of internal haemorroids :—Palliative treatment is advised when the piles are secondary to some other condition except carcinoma.

Bowels are regularized with a small dose of a mild laxative at bed-time. Various sclerosing creams are available in collapsible tubes with an applicator fitted to it. The patient is advised to apply the cream at night before defæcation.

Inflammed and permanently prolapsed piles—if of short duration—reduction may be attempted under intravenous Pethidine (50 to 100 mg.) Foot and of the bed to be kept raised. Local application of glycerine mag-sulph dressing 3 or 4 times a day. Systemic antibiotics and anti inflammatory drugs like Phenylbutazolidin must be take orally. These help to overcome the acute episode. If not controlled by any of the above methods, surgery is the only method available for a radical cure.

Active treatment : is given by injections or surgery.

Injection treatment :—is indicated in (*a*) bleeding 1st degree piles, (*b*) early second degree piles (about 30% relapse).

Technique :—Injections are given as an operation procedure. The patient is advised to have a mild laxative the previous night. No other preparation is needed. He lies on the table in the left lateral position. Good illumination is indispensable. Phenol in almond oil about 3 to 5 ml. is injected. After introducing the proctoscope and visualizing the piles it is pushed in further till it is just above the pedicle. Then at the root the solution is injected into the submucosa using a three ringed Gabriel syringe. The mucosa becomes pale and elevated if injection is made in the correct plane, then the whole procedure is painless. Dull ache is present for a few hours and there may also be a transient ooze. It may be necessary to repeat this after six weeks in some cases.

Surgery is indicated in :—(1) 3rd degree hæmorroids, (2) lapse of 2nd degree hæmorroids ; (3) fibrosed hæmorroids and (4) interno-external hæmorroids.

It is usually done under spinal anaesthesia. Ligation and excision of the three major pile masses are made. The smaller ones tend to get thrombosed after the operation. It is importent to leave a skin margin between the raw areas, so as to avoid stricture formation. Post-operatively the patients may have severe pain so it is advisable to warn the patient before operation and prepare him to expect it. Retention of urine is another common post-operative problem ; this is tackled by removing the gauze or tube that may be kept in the anal canal hot water bottle, mobilisation of the patient, and controlling the pain with anæsthetics. The patient is instructed to carry out finger-dilatation using a local anæsthetic jelly, every day for 3 or 4 weeks.

I usually advise my patients to buy a family planning condom (Nirodh), slip it over the finger and then do the dilatation. In elderly and enfeebled patients where surgery is indicated, but cannot be carried out due to some contra indication, ligation by means of a rubberband, using a special "gun" is made which is a recent advancement and also a very useful and comparatively a painless procedure.

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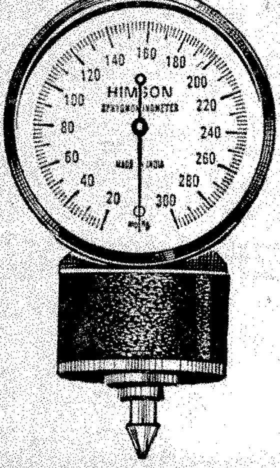

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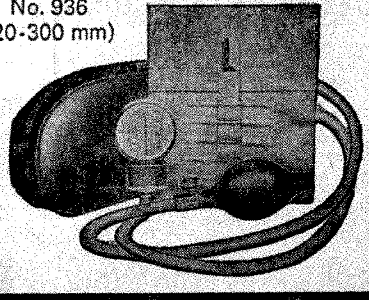

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Editorial

WAR AGAINST DISEASE

THE Srivatsava Committee appointed by the Central Government to go into the question of rural medical relief has been able to assess the situation most realistically with a good satisfactory approach. The fault lay in the fact that the medical service in rural areas aimed at a system not so easy to be introduced in the existing set-up. The craze for the Western system made the introducers feel that the old traditional service provided by *vaids, dais* and *hakims* should be completely done away with although they had no viable alternative to provide. The community has been throwing up semi professionals who came in to be dubbed quacks and totally discouraged. They were simple folk, inexpensive but all the same served the community over the years. The new modern system which has attempted while liquidating them found itself unequal to the task. Because of the lack of resources they lacked in quality and quantity. Organisational defects added to the other defects and there was no co-operation between those who had to serve and those who were served. The authorities have therefore veered round to the view that a better method will be to integrate the traditional health practitioners into the National Health infrastructure which they believe would be productive of good results. There has been a proposal to train teachers and other literate persons in villages to provide an elementary health service which is certainly welcome. According to this system training is to be given in five different heads like *dais* for maternity service family planning workers and dispensers of specific remedies in common ailments and the programme also would appear to include training in immunisation to control communicable diseases and in promotional and preventive health work. It has been estimated that there are over 25 lakhs of primary school teachers in the country who can benefit from the training proposed. Incidentally they could supplement their meagre income also. Literate women may also like to participate in this programme. If these proposals, were implemented, it would be possible to build up an infrastructure of semi-skilled medical personnel, who can periodically be sent to attend refresher courses to keep in touch with the developing trends in medical relief. Dr. J. B. Srivatsava, who headed this committee is himself the Director General of Health Services and should therefore, be aware of all the intricacies of the problem. Millions of India's people who are now without even elementary medical care can be assured of some help where none exist now.

In this context, Dr. N. P. Gupta, Director of the Virus Research Centre in Delhi speaking about India's record in stamping out communicable diseases has stated that it compares unfavourably with the eradication measures taken by other Third World countries. He has warned that though plague has disappeared over 20 years ago it might reappear on some species of rats in South India. It is certainly an ominous tradition. Another disease that has been conquered is small-box but here again there is no room for complacency. He has also uttered a warning against cholera which is endemic in seven States of India. It should not be difficult to control this dreaded disease if measures are taken on an emergency basis as soon as the first cases are noticed.

The Union Health Minister, Dr. Karan Singh stated the other day that there is a prospect of wiping out T B. and leprosy by the end of the present century. Though effective drugs are now available the treatment requires a certain measure of segregation of patients which under the conditions prevailing now in the country is not so very easy to secure. India has failed to check the spread of leprosy and this is quite unfortunate. Worm infestation and gastric diseases account for the largest number of deaths among the poor. Dr. V. Ramalingaswami, Director of the All India Institute of Medical Sciences referring to the high incidence of mortality in children and babies from poor families who have to run the gauntlet of 28 infections in their first two years of life. The majority of these are gastric complaints and respiratory ailments.

The term disease is still unknown to the vast majority of the population who do not therefore realise the importance of hygiene, clean food and water. Both towns and villages suffer from poor sanitation largely because people do not realise its importance.

The Government has accepted the recommendations of the Hathi committee and proposes to manufacture basic drugs on a mass scale in the public sector. But, unless essential drugs are sold at reasonable prices, the poor people will be unable to avail of the benefit from the use of such drugs when prescribed by their doctors.

Talking of the drugs, two recent surveys indicate that while spurious drugs do exist, their prevalence has not reached alarming proportion. According to the first survey, samples of spurious drugs were found from 286 selected drug samples ranging from antibiotics to common household remedies. The drug adulteration works out to about 4 per cent. The draft bill has been prepared we understand, in consultation with the Law Committee amending the Drugs and Cosmetics Act. The important recommendation proposed in the draft bill is imprisonment with a minimum of three years for the manufacture of misbranded or adulterated drugs without a valid licence causing a grievous physical injury.

Another recommendation says that the powers of the drugs inspector should be enhanced to enable them to seize the drugs and other incriminating documents from individual premises, election vehicles carrying drugs ask for the production of the records and call for statements from the persons concerned. The Constitution of the Drug Advisory Board is being made mandatory on the part of the States. These boards will include representatives from the medical profession, the drug industry and the consumers. Such powers now function effectively in Maharashtra, Gujarat, Karnataka, West Bengal and Delhi and we believe that the Drug Control Authority in Tamil Nadu State should be extended and made to function stringently and efficiently so as to ensure patients suffering from various diseases obtaining effective drugs.

ASPIRIN AND CORONARY HEART DISEASE

FINDINGS OF A PROSPECTIVE STUDY

In the first analysis we excluded people who reported a history of heart disease, stroke, diabetes, or high blood pressure. The results in relation to coronary heart disease for all men, men who smoked 20 or more cigarettes a day and all women were studied. For each sex the observed number of deaths from coronary heart disease was slightly less than the expected number that is a mortality ratio less than 1·00 among people who seldom took aspirin and slightly greater than the expected number among people who never took aspirin and those who often took aspirin.

Essentially the same relationships were found in respect to deaths ascribed to cerebral vascular lesions. For all deaths (disregarding cause) the mortality ratios were greater than 1·00 among people who often took aspirin.

Since these findings are very different from those in the published retrospective study we made several more analyses to see whether a different handling of the data would yield results more in line with that study. For example, one analysis was the same as that described above but confined to experience during the first 39 months of the study; another included all subjects regardless of past history of disease; another included all subjects but was confined to the 12 month period after the date of enrollment of each subject and another was confined to the first six month period. None of these analyses suggested that taking aspirin often was associated with a reduction of death rates from coronary heart disease.

At Dr. H. Jick's suggestion we analysed data on only those people who on the initial questionnaire had said that they had or had had heart disease. Among women aged 35-49 the mortality ratio for the aspirin often group was 0·67 but this ratio was based on small numbers. Among men aged 35-49 and those aged 50-64 the mortality ratios for the aspirin group were 0·95 and 0·92 respectively. Taken as a whole, however, the figures did not indicate that the use of aspirin often was associated with a reduced risk of death from coronary heart disease.—(E. Cuyler Hammond, Lawrence Garfinkel, *Brit. Med. Jour.*, 3-5-1975.)

FAILURE TO EJACULATE

What could be the cause of a failure of a young man to ejaculate any semen despite the maintenance of an erection and the sensation of orgasm? Physical examination shows no physical abnormality and apart from mumps as a child there is no history which might suggest a cause.

It is not unusual to come across otherwise healthy young men who appear to have a normal erection and orgasm but do not ejaculate semen. The defect appears to be a want of synchronous contraction of the fibres at the neck of the bladder so that the semen refluxes back into the bladder. One can postulate that the disorder is caused by some form of neuropathy, and a similar deficiency occurs after sympathectomy or after surgical removal of part or all of the bladder neck. But in many otherwise healthy young men no obvious explanation can be found for this symptom. The diagnosis can be confirmed by finding large numbers of sperm in the urine voided immediately after ejaculation. This also suggests a remedy for the infertility which follows on this reflux of semen. By making the urine alkaline, it is possible to allow the sperms to survive in the urine which can be collected, centrifuged, and the concentrate of sperm used to impregnate the patients wife by artificial insemination —(*British Medical Journal*, 3 May, 1975).

GLEANINGS

MEDICINE AND THERAPEUTICS

Management of acute gout—(*The Brit. Med Jour.*, of Clinical Practice April, 1975.

The patient requires prompt, effective therapy and the anti inflammatory agents phenylbutazone (Butazolidin) 200 mg *t.d.s.*, and Indomethacin (Indocid')50 mg *t.d.s.*, are the drugs of choice. The high dose is maintained until symptoms are controlled, usually within 24 48 hours and the dose is then reduced. There are few side-effects, even with high dosage, provided that it is given only for a short period. Both drugs are irritant to the stomach and should be taken with meals; alternatively they can be given as suppositories. Besides being an anti inflammatory agent, phenylbutazone has a uricosuric action but this is clinically unimportant. Whichever drug is used, the patient should maintain a high fluid intake during the acute attack.

Colchicine, a traditional remedy for acute gout, is more specific and can be used as a dignostic test since it is highly effective in gout but of no value in other forms of arthritis. It is neither anti inflammatory in the general sense nor uricosuric, and it is only recently that its mode of action was discovered. It acts by inhibiting the release of action chemotactic factors from polymorphonuclear leucocytes which have digested the urate crystals, thus blocking the inflammatory response. Mild side effects are experienced by most patients before therapeutic benefit but 80% of patients get relief in less than 24 hours. The dose needed varies from patient to patient, but 5 mg. (10 tablets) is usually sufficient.

In subsequent attacks, when the amount taken previously is known, half the total dose can be given initially, followed up by 0·5 mg, hourly as before. This hastens the beneficial effect without increasing toxic symptoms. Rarely an attack proves resistant to all 3 drugs, a short course of steroids or ACTH should then be tried and occasionally proves effective.

Long-term management:—Phenylbutazone, indomethacin and colchicine, so valuable for the acute attack, are ineffective agents for prophylaxis. Long term maintenance or interval therapy is indicated if acute attacks occur more frequently than once every 6 months, if renal failure or disfiguring tophi have developed, or if the serum uric acid level is consistently greater than 8·0 mg./100 ml, Protection is not complete and if acute symptoms develop they should of course, be treated in the usual way. The drugs available act by increasing renal excretion of uric acid or inhibiting its production.

Probenecid (Benemid) is the most commonly used uricosuric agent and at the usual dose of 500 mg. *b. d.* side effects are uncommon, the most frequently observed being rashes and mild gastro-intestinal symptoms. It acts by blocking renal tubular resorption of uric acid, thus increasing renal clearance. It is effective in thiazide induced hyperuricaemia. Patients should not take aspirin concurrently since even in small doses this drug blocks the uricosuric action of probenecid and similar agents.

Barbiturates in the elderly.—(*British Medical Journal*, 8-2-1975).

Can barbiturates cause sudden and unheralded attacks of confusion at night in the elderly ?

The short answer to this question is "yes". Most geriatric physicians believe that barbiturates exert undesirable effects in the elderly often enough for other drugs, particularly chloral, to be preferred. It is not certain that barbiturates and other sedatives simply cause progressive depression of brain function. There is some evidence that they may stimulate some brain centres and inhibit others. After the injection of barbiturates into mice and rats, for example, narcosis is preceded by a state of excitation in which the animals show hyperactivity for 5-15 minutes. The loss of brain cells which accompanies ageing may cause a change in the equilibrium between functional centres, making the brains of elderly people more likely to respond to barbiturates by confusion and delirium. This phenomenon, known as barbiturate activation, appears first in the frontal leads and then spreads to the parietal and occipital cortex. It may be accompanied by clouding of consciousness and occasionally by euphoria. It is a well known clinical observation that when barbiturates are given to patients in a state of agitation or disturbed by pain, they may cause restlessness, excitement, and delirium rather than sedation. This effect is not confined to the aged, but is commoner in later life. The sensitivity of older patients to drugs such as barbiturates may also be related to the delayed metabolism of drugs in old people. There is evidence that a single oral dose of 200 mg. of amylobarbitone produces much higher blood levels in old people than in young people and that these remain at a higher level for a longer period. These results are taken as showing that the rate of hydroxylation of amylobarbitone sodium decreases with age.

Anxiety symptoms and coffee drinking

—(Editorial *Brit. Med. Jour.*, 8-2-1975)

Medical practice nowadays brings frequent reminders that anxiety symptom may be due to a drug prescribed in treatment. Loss of appetite, disturbance of sleep, jitteriness, tachycardia, and excessive sweating—all may be due to an amphetamine like anorectic drug prescribed for obesity. A patient taking a psychotropic drug may complain of uncomfortable feelings, irritability, light headedness, and blurring of vision, and it may then be difficult to sort out which symptoms reflect a psychiatric disorder and which are effects of the drug. Acute anxiety symptoms such as restlessness, tremulousness, flushing, sweating, and preoccupation may be effects of the withdrawal of alcohol or other drug when for some reason the regular supply has been cut off. Furthermore the wise physician is alert to the possibility of an underlying organic disease, not only thyrotoxicosis and the uncommon phaeochrmocytoma, for a patient at the early stage of the spread of a neoplasm may be intensely aware that something is going seriously wrong with him and feel his existence to be as seriously wrong with him and feel his existence to be as threatened as does the patient with an anxiety neurosis. Yet, unable to point to any specific symptoms, he may mislead his doctor into thinking that his illness is psychiatric.

A recent paper by Greden serves as a reminder that excessive coffee drinking too, may produce symptoms severe enough to suggest a diagnosis of anxiety neurosis. Three cups of strong coffee at breakfast (100-150 mg caffeine per cup), two over the counter headache tablets on the way to work (say 30 mg each), and then a cola drink (50 mg) may provide 500 mg caffeine. That is twice the maximum therapeutic dose and sufficient in some cases to produce irritability, tremulousness, occasional muscle twitching, palpitation; rapid and irregular pulse, disturbance of sleep, diuresis, and gastrointestinal disturbance. Greden's three patients were a nurse who after buying a new coffee pot had been drinking 10-12 cups of strong coffee each day, an army lieutenant whose coffee pot was a regular feature of his desk, and an army sergeant who suffered severe recurrent headaches at the weekend and who drank 10-15 cups of coffee during a day's work. In each case a diagnosis of anxiety neurosis had been sustained until the part played by the coffee drinking had been recognized. One may ask, of course, what led these patients to drink so much coffee. Some people drink coffee to excess in order to relieve headache, lethargy, or feelings of inadequacy.

The message seems plain. Inquiries into anxiety symptoms, especially when there is recurrent headache, should include questions not only about prescribed drugs and self medication but also about coffee drinking. The dangers of excessive coffee drinking were well known to an older generation of doctors, apart from whatever it may add to the risk of myocardial infarction. The exotic patterns of recent years in the misuse and abuse of drugs have drawn attention away from the homely and everyday.

BOOKS RECEIVED

Community Health, Preventive Medicine and Social Services—(Third Edition), Pp. 510, Dr. J. B. Meredith Davice, M.D., (Lond.), F.F.C.M., D.P.H., M/s. Bailliere Tindall, 7 and 8, Henrietta Street, London WC2E 8QE. [Price : £ 3·75/-

The Journal of the Assn. of Independent Medical Practitioners—Inaugural Issue Vol. 1, August, Chap. 1. M/s. The Journal the Association of Independent Medical Practitioners, 2/10, Post Office Street, Madras-600001.

Treatment of Head Injuries—By Dr. D. Raja Reddy, F.R.C.S., F.D.A.C.S., F.I.C.S., Pp.58, M/s. The Kothari Book Depot, Opp: Ashok Talkies, Jambag, Hyderabad, (A.P.). [Price : Rs. 5/-

Medical Book News—A guide to new books with concise, Pp. 32. Vol. 9, No. 4, July 1975. M/s. The Medical Publications, 6, Owners Court, Near Strand Cinema, Colaba, Bombay-400005. [Price : Rs. 8/-

Kuzhandai Valarppum Noi Thaduppum—Pp. 188. Dr. U. Rama Rao. M.B.B.S., D.C.H., 290, Thambu Chetty Street, Madras-600001. [Price : Rs. 7-50/-

Leprosy—Diagnosis and Management—By Dr. C. K. Job, B.Sc., M.D., F.A.M.S., F.R.C.P., Dr. A.J. Selvapandian, B.Sc., M.B., M.S., F.A.C.S., F.I.C.S., and Dr. P. V. Kurian, M.B., B.S., D.T.M., M.S., Pp. 118, M/s. The Stores Officer, Hind Kusht Nivaran Sangh, (Indian Leprosy Association), 1, Red Cross Road, New Delhi-110001 [Price : Rs. 15/-

REVIEWS OF BOOKS

The Alexander Principle—How to Use Your Body—By WILFRED BARLOW, Pp. 223. Published by Arrow Books Limited, London. Copies available at M/s. B. I. Publication, 13, Agarchand Mansions, 1st Floor, 35, Mount Road, Madras-2.

This book is a commentary on the thirty years' work which the author has done since he met Alexander. It is motivated by a feeling of urgency that, in the present mess and muddle in which we find ourselves, his principle can provide a new touchstone for most of us. It can not only provide a criterion for evaluating our own actions but a criterion for assessing the actions of other people and the value of new popular trends and new popular leaders. It also provides a way of looking at those well established and time-honoured dogmas which, in the words of Paracelsus, "are not worth a goose's turd,"

Frederick Matthias Alexander spent a lifetime fighting for a theory which is now accepted as a major contribution to medicine, education and psychiatry.

The Alexander Principle states that much of modern man's illness can be traced to the way in which he uses and carries his body. Muscles are tensed, backs are 'humped,' vertebrae contracted, necks, hips and pelvis are under constant—and unnecessary strain. The result—arthritis, rheumatism, backache and much of the tension of day to day life.

Dr. Barlow studied under Alexander and now teaches the Principle himself. In this book, he shows us how we can make the best use of our bodies, enjoy better physical and mental health and overcome problems of sexual functioning. As the *British Medical Journal* says—The book is written lucidly and with conviction and makes easy reading—contains much common sense and advice, clearly and colourfully expressed, from which few could fail to gain. Line drawings to illustrate the exercises. are very instructive.

T. N. S. RAGHAVACHARI.

"Treatment of Shock: Principles and Practice" (In 5 parts)—By: WILLIAM SCHUMER, M.D., and LLOYD, M. NYHUS, M.D., The Abraham Lincoln School of Medicine, Chicago, Illinois Pp. 208; Published in Great Britain by Henry Kimpton Publishers London. Copies available from K.M. Varghese and Co., 104, Hind Rajasthan building, Dadasaheb Phalke Rd., Dadar, Bombay-14.

[Price: Rs. 12-50

Eighteen doctors of medicine, each being a specialist in the topic relating to particular disciplines of medicine and conversant with all aspects of particular diseases he has dealt with, have contributed to this very valuable book on the 'Treatment of Shock'.

The organization of this book is based upon the clinical, physiologic, and biochemical priorities in the treatment of the shock patient, he monitors and measures the significant physiologic parameters, replaces lost volume, and repairs the acid-base imbalance. Of no lesser importance, he gives appropriate infusions to replenish nutritional deficits, which support the liver to produce the nutritive molecules necessary for cellular funcion. Further, the clinician provides the necessary protection and support of the function of other vital organs heart, lungs and kidneys.

The editors' working definitions of shock is a loss of effective circulating blood volume, which produces abnormal microcirculatory perfusion and attendant cellular metabolic derangements. This is the common denominator of all types of shock, whether cardiogenic, septic, hypovolemic, or vasogenic Therefore, by treating primarily the abnormal microcirculation and metabolism, the clinician concurrently treats the underlying cause of the low flow state.

The subject matter is divided into 5 sections—*viz*,—(1) The treatment of vital organs, (2) The treatment of underlying causes; (3) The support of the Vital organs, Heart, Liver, Lungs, Kidneys, (4) New Directions for the ailing refractory shock; and (5) Finally a clinical summary which gives an excellent outline for the treatment of shocks, in about 3 pages written by Dr. William Schumer, Head of the Department of Surgical services in the Abraham Lincoln College of Medicine in Chicago.

This is an excellent and valuable guide and book of reference while a patient in shock has to be treated, who may not be in a position to describe the cause, nature and precipitating factors of his condition and how he came by them.

T. N. S. RAGHAVACHARI.

"Craig's care of the Newly Born Infant"—By A J. KEAY and D M. MORGAN, Fifth Edition, Pp. 494, Published by: M/s. B. I. Publications, 13, Agarchand Mansions, 1st Floor, 35, Mount Road, Madras-600002.

[Price: £. 4.50.

There is no more difficult task than to prepare a new edition of a book and rewrite major portions of it, without disturbing the general theme of the previous edition. The two authors of this book who are well-known paediatricians have done an excellent job in achieving this.

While many aspects of care of the new born have been described, great stress has been laid on the role of nursing in the care of the new born infant. This should be so because, the part played by the nursing staff during the first few days of an infants' life, is no mean one. The chapters on feeding, convulsions and abnormal behaviour, weight loss and other important signs and practical procedures, are particularly well written and should be of great use to medical men.

This is indeed a beautiful book with a superb get-up. There are numerous illustrations including many of them photographed in colour. It should be an invaluable asset to every medical practitioner.

—U. V. R.

Medical Nemesis (Ideas in Progress) The Expropriation of Health—By IVAN ILLICH, Pp. 183. Published by: D. Mehra, Rupa and Co., Under the Ideas in Progress Open Forum Series, 15, Bankim Chatterjee Street, Calcutta.

[Price Rs. 10.00.

A vein of cynicism runs through the entire book. 'The medical establishment has become a major threat to health'. This is the opening sentence in the theme of Ivan Illich's fifth book, his most radical and uncompromising contribution to social thinking to date. Here he decimates the myth of the magic of contemporary medicine and examines the rituals conducted by the medical profession and its adjuncts. He employs for his main analytical tool a term so far only reserved for use in specialized medical journals and explores its implications to the full: —Iatrogenesis, meaning doctor-made illness. This is defined as comprising only illness which would not have come about unless sound and professionally recommended treatment had been applied. Relentlessly and with full documentation taken from recognised medical sources he proves the importance of medical services to change life expectancy, the insignificance of most contemporary clinical care in curing disease, the magnitude of medically inflicted damage to health, and the futility of medical and political counter-measures to sick making medical care.

In the final chapter Illich points out an alternative to this breakdown. By recognising and insisting on the essential ingredients of personal health, man can recover his integrity over his body and life. 'People need no bureaucratic interference to mate, give birth, share the human condition and die. Man's consciously lived fragility, individuality and relatedness make the experience of pain, of sickness and of death an integral part of his life. The ability to cope with this trio autonomously is fundamental to his health.

T. N. S. RAGHAVACHARI.

CORRESPONDENCE

To the Editor, 'ANTISEPTIC' Madras,

Query

Sir,

The standard text-books mention "Replacement transfusion" as the only possible treatment of Erythroblastosis fœtalis due to *Rh* incompatibility.

Recently, the Associated Laboratories of Bombay have claimed their product "Rhiggal", the *Rho* (D) Immune globulin (Human) as a specific remedy for the prevention of the hæmolytic disease of the new born stating that it has a 100% success rate.

I want clarification of the following points through your esteemed journal:—

1. What is the incidence of Rh-negative mothers in our country ?
2. What is the percent incidence of erythroblastosis amongst the Rh-ve mothers ?

3. Is there any other effective treatment for the hemolytic diseases of new born due to Rh incompatibility besides the well proven exchange transfusion ?

4. Is the claim made by the firm for the effectiveness of the *Rho* immune serum correct ?

Has any trial been made with "Rhiggal" in our country ?

Have cases been reported where the fœtus and infant had reduced morbidity and mortality after the use of "Rhiggal" ?

What is the percentage rate of success with the immune globulin ?

5. To determine the dosage of Rhiggal the firm recommends the determination of the extent of fœto maternal leakage. How is the amount of fœto maternal bleed determined?

Assistant Medical Officer,
Central Railway,
Bhusaval, Maharashtra,
17-9-1975.

Dr. S.K. GOUR,
M.B., B.S.,
D.C.P.,

Answers

1. The incidence of *Rh*-negative individuals in India varies from State to State from 4 to 10 per cent, the mean incidence being 7 per cent. It has no relation to sex.

2. The incidence of erythroblastosis fœtalis is estimated to be about one in every 400 to 500 live births.

3. The only effective treatment of hæmolytic disease of the newborn due to *Rh* incompatibility is exchange transfusion, though not all cases may call for it. All other forms of treatment, like phototherapy, are auxiliary.

4. *Rh* immunoglobulin, when given in a dose of 200 μg, is successfull in suppressing *Rh* immunization in 98% of cases and no antibodies will be formed in the next pregnancy with a *Rh*-positive fœtus. Naturally when there is no *Rh* immunization, there will be no *Rh* disease.

"Rhiggal" is the trade name for *Rh* immunoglobulin. There are many reasons for failure of *Rh* prophylaxis by *Rh* immunoglobulin like delayed treatment, immunization during pregnancy, etc. Inadequate dosage may be a rare cause.

5. Ideally all *Rh*-negative maternal blood should be screened by the acid elution method of Betke and Kleihauer for the assessment of the size of the fœto-maternal bleed and appropriate adjustment of dosage of *Rh* immune globulin. The method is described in "Blood Transfusion in Clinical Medicine" by P. L. Mollison, 5th Edition, Appendix 12, page 696.

85, Burkitt Road,
Madras-600017,
3-10-1975.

K. S. RANGANATHAN,
M.R.C.S., L.R.C.P.

To the Editor, 'ANTISEPTIC', Madras.

Query

Sir,

A child of one year with frequent attacks of fever, which was treated with ordinary antibiotics was referred to a Pædiatrician, when the child was not responding.

The child was sent back with a prescription for Penidure L.A. 24 and some tonics and tablets. Is it advisable to give such a large dose to a one year old? Apart from the large dose can the child tolerate the pain of the injection.

P. U. Dispensary,
Perumagalur,
Thanjavur Dist,
12-9-1975.

K. SADANANDA ACHAR,
M.B., B.S.,
Medical Officer.

Answer

At present pædiatricians feel that long acting penicillin prevents the child from getting repeated attacks of respiratory infections, just as it is being used as prophylaxis in Rheumatic fever. Usually either 6 or 12 lacs are given in equally divided doses into both the gluteal muscles. Penicillin 24 lacs being very painful and requiring a huge amount of water for preparation, I think such a high dose is not advisable for a one year old child.

190, Thambu Chetty St.,
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U. RAMA RAU,
M.B., B.S., D.C.H.

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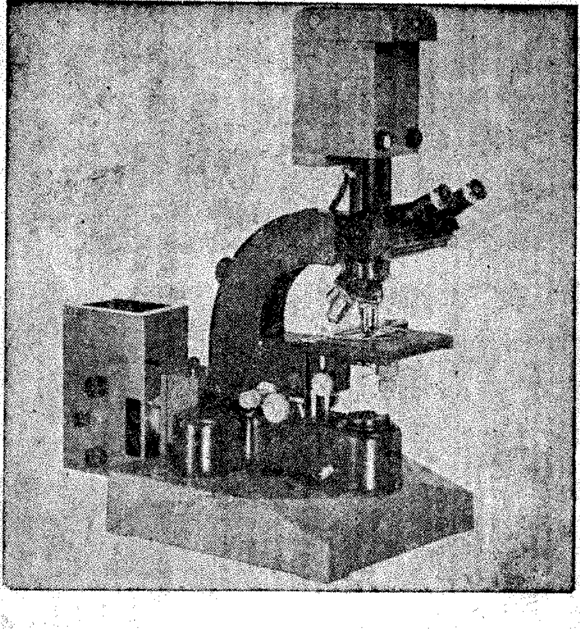

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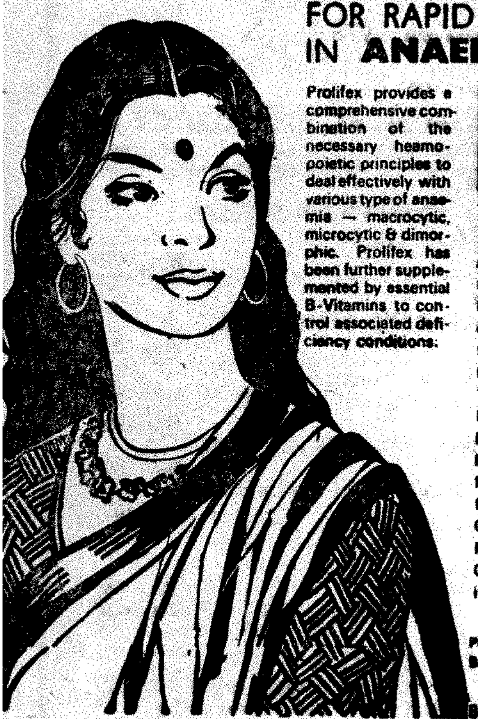

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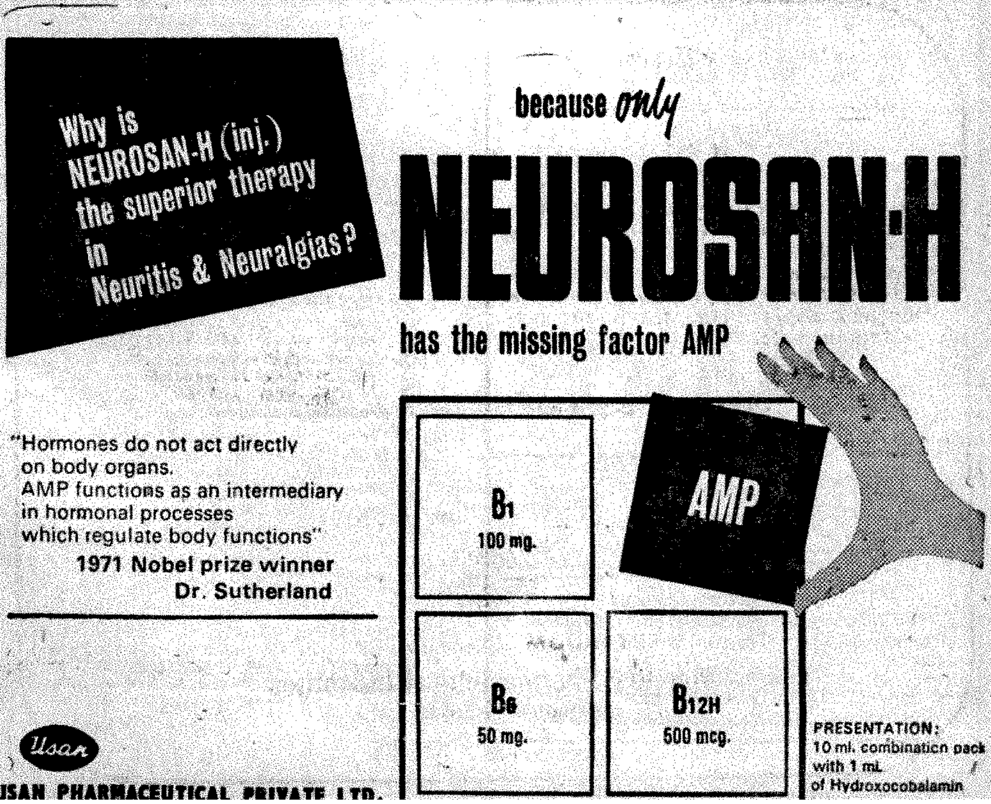

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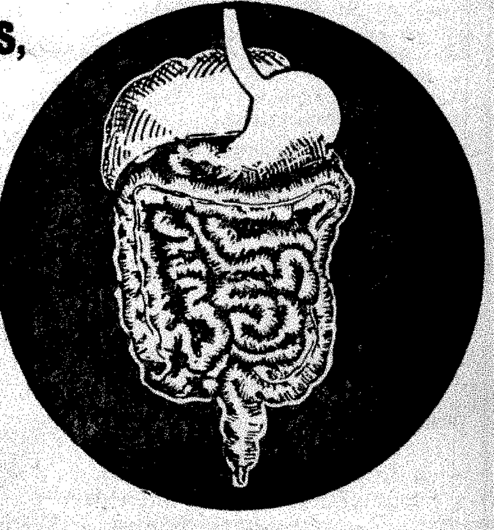

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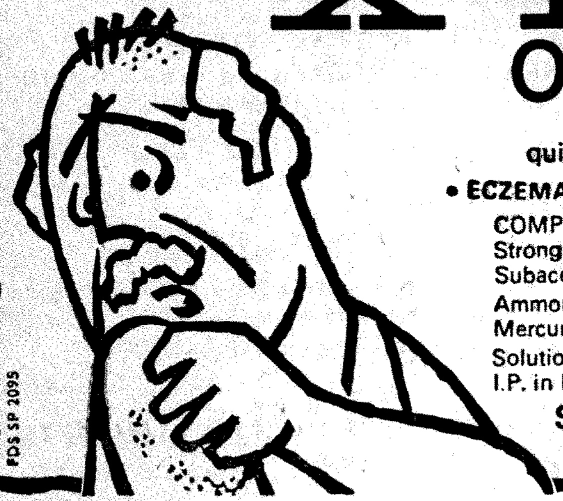

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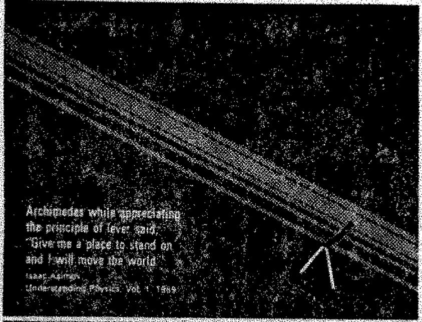
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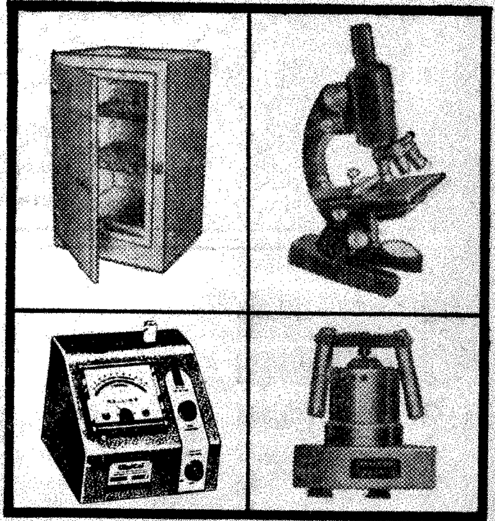

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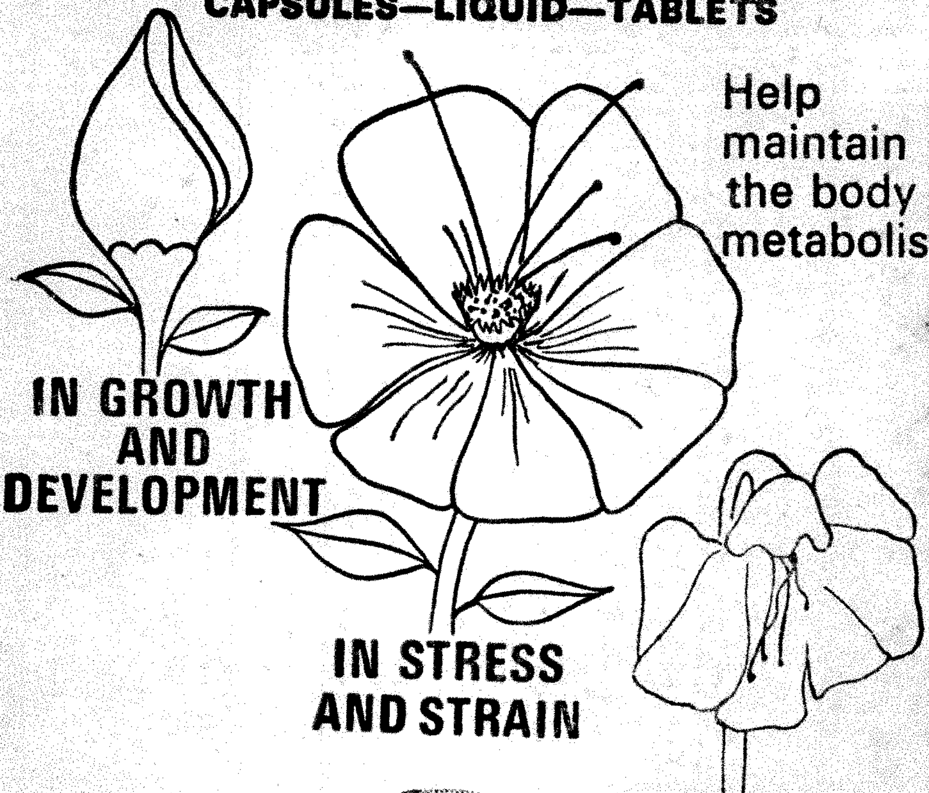

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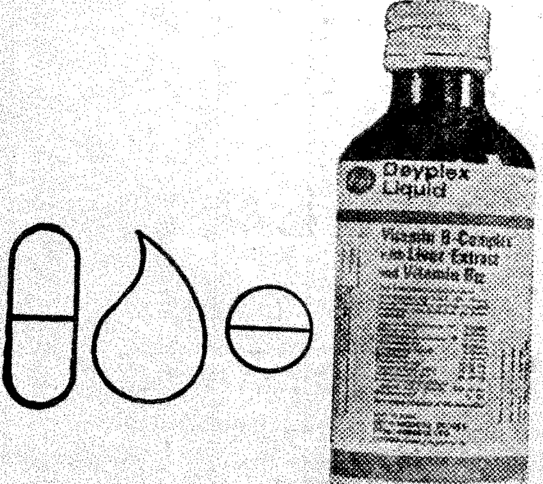

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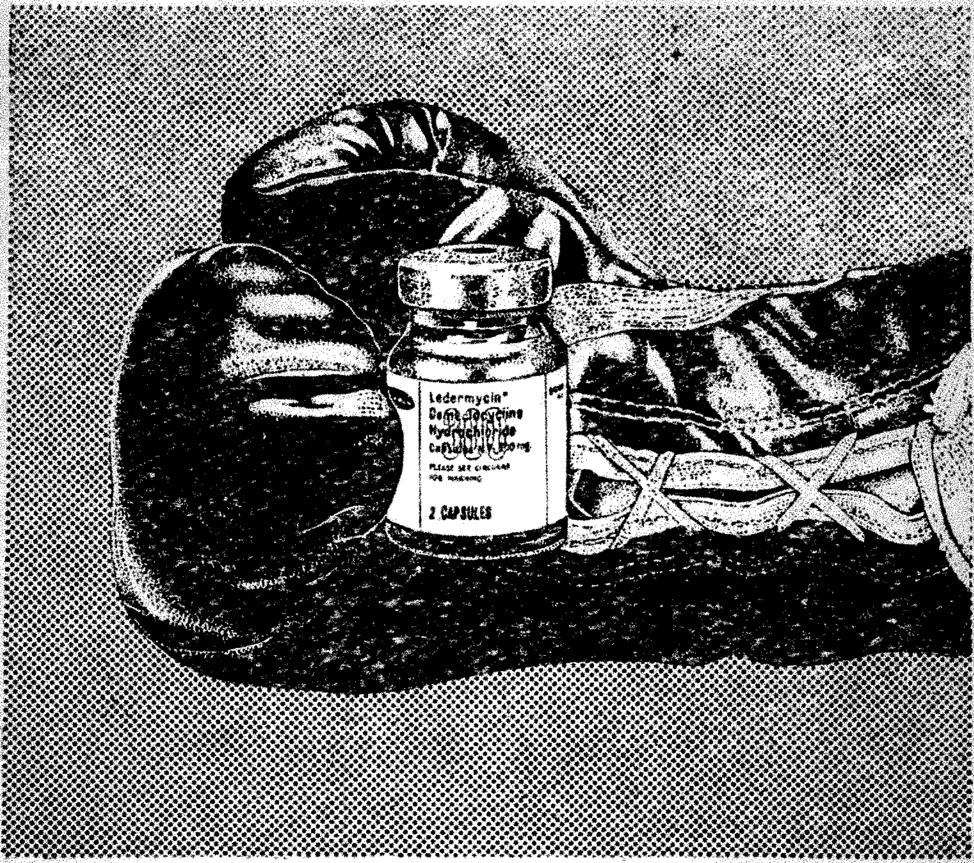

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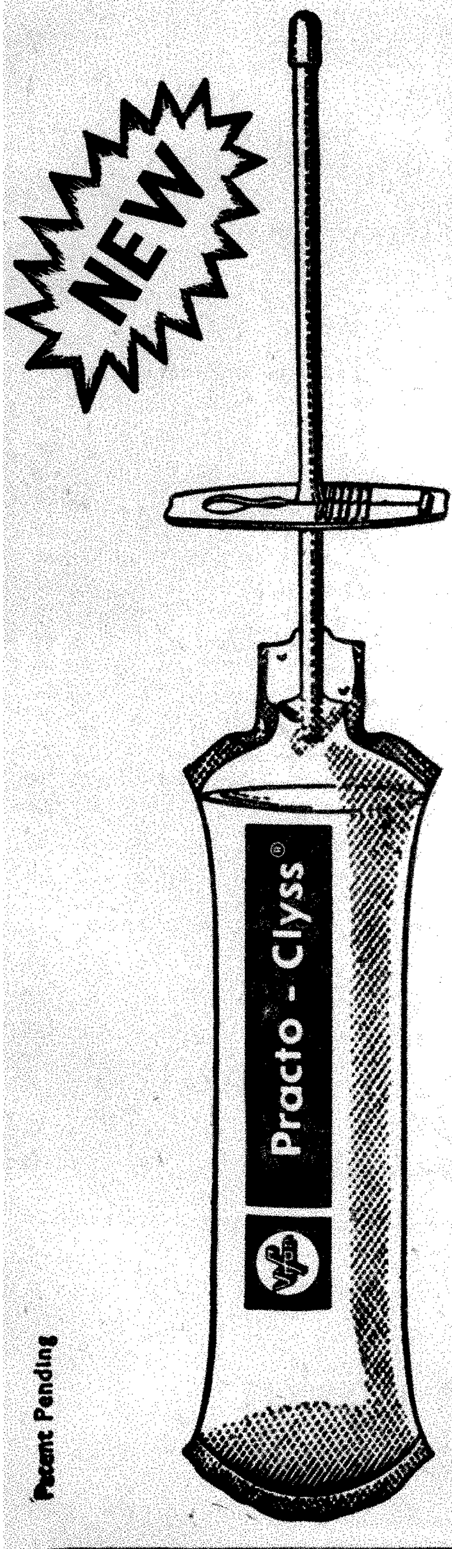

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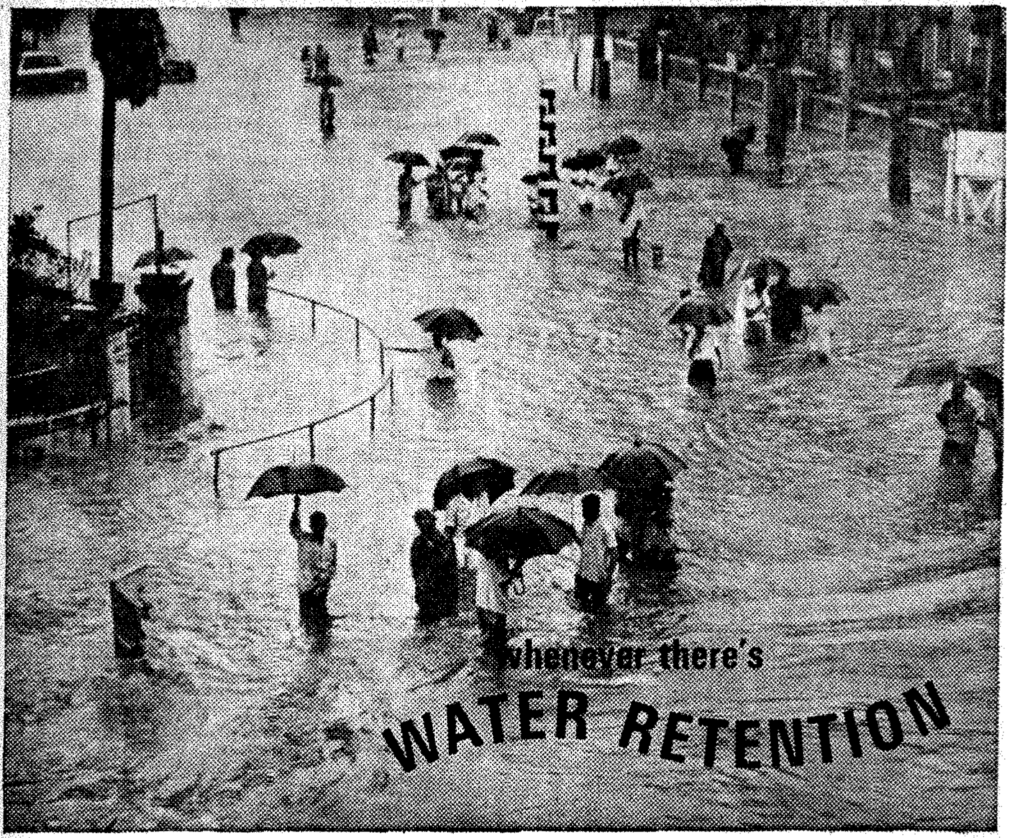

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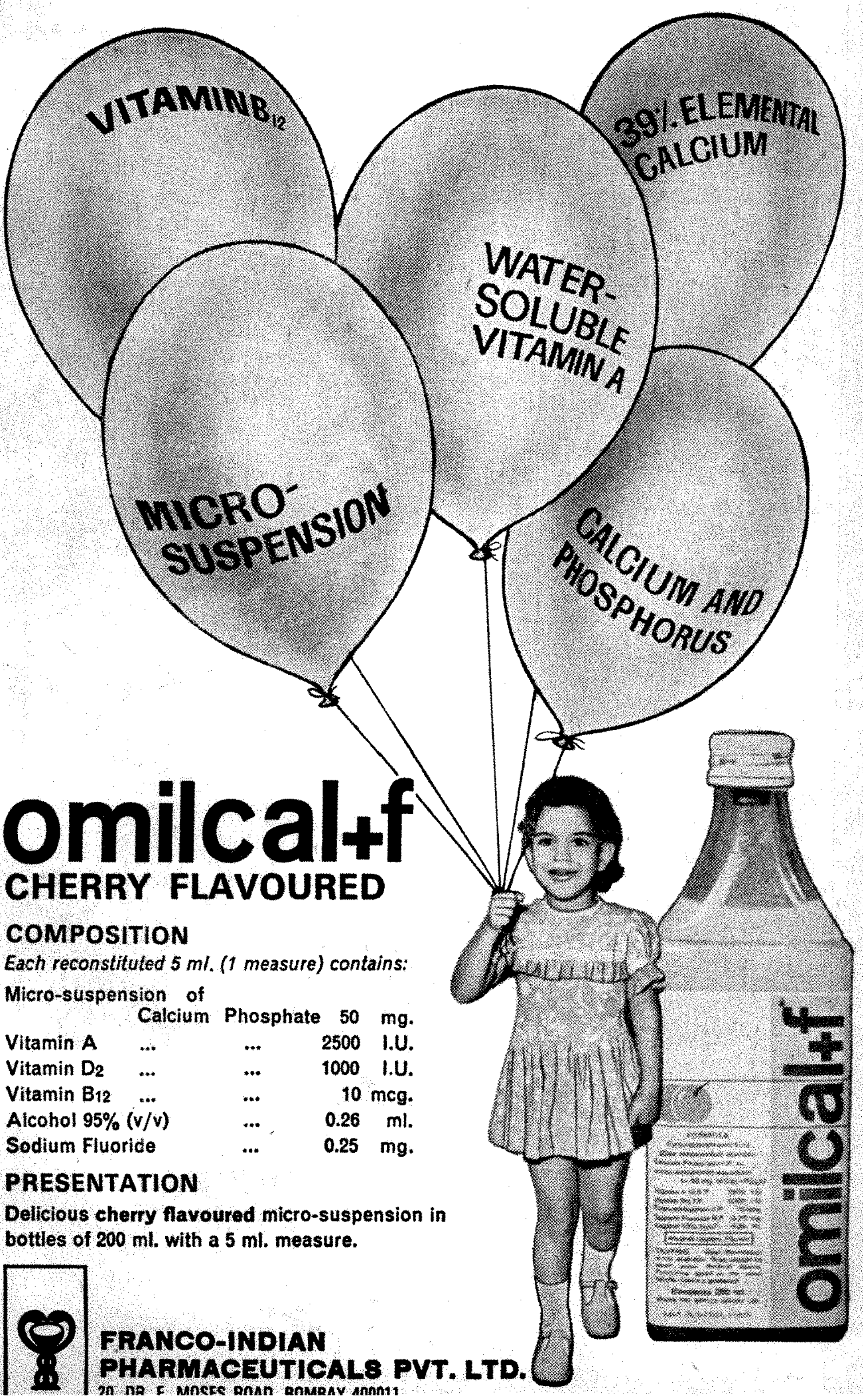

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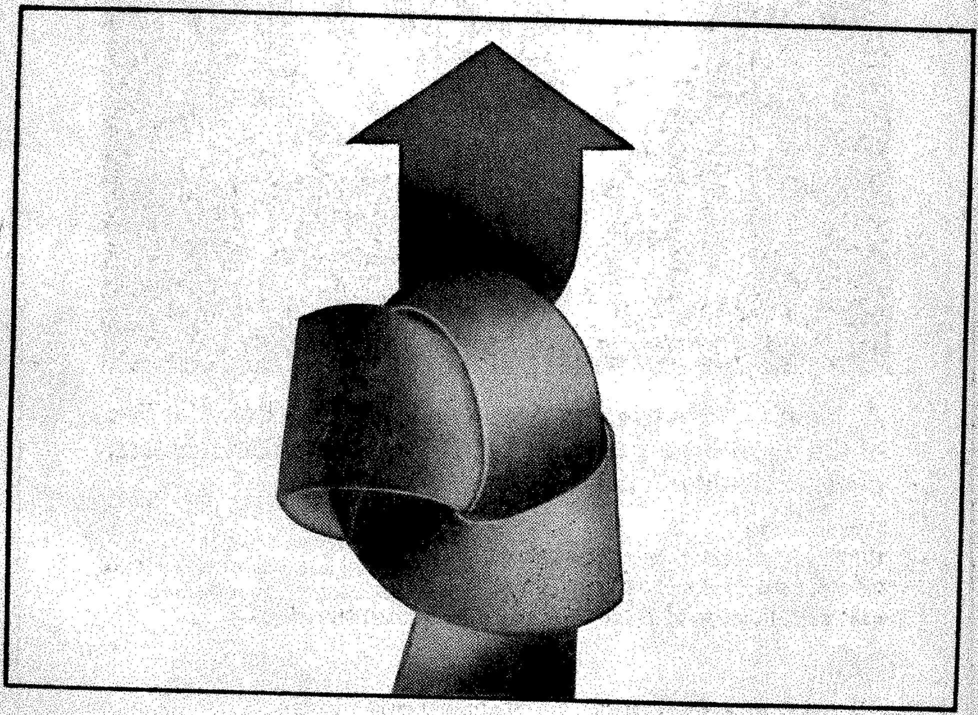

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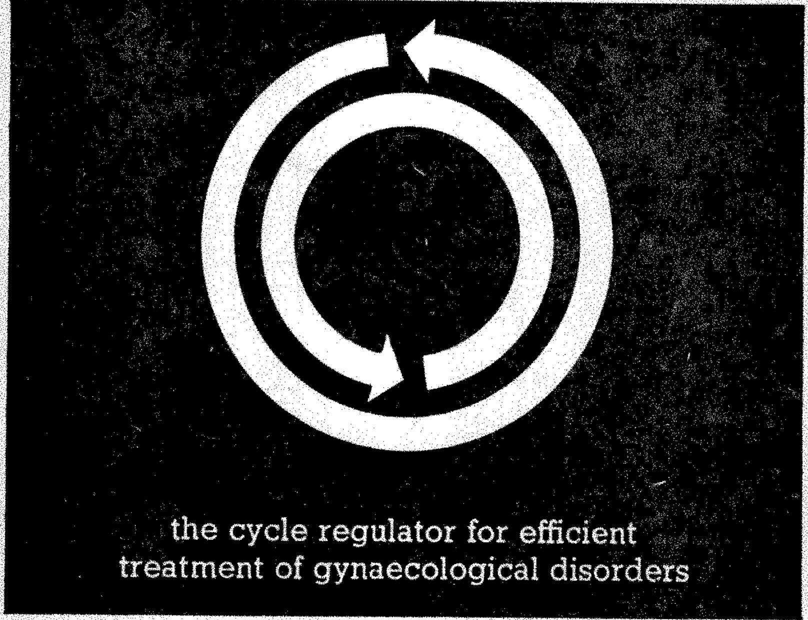

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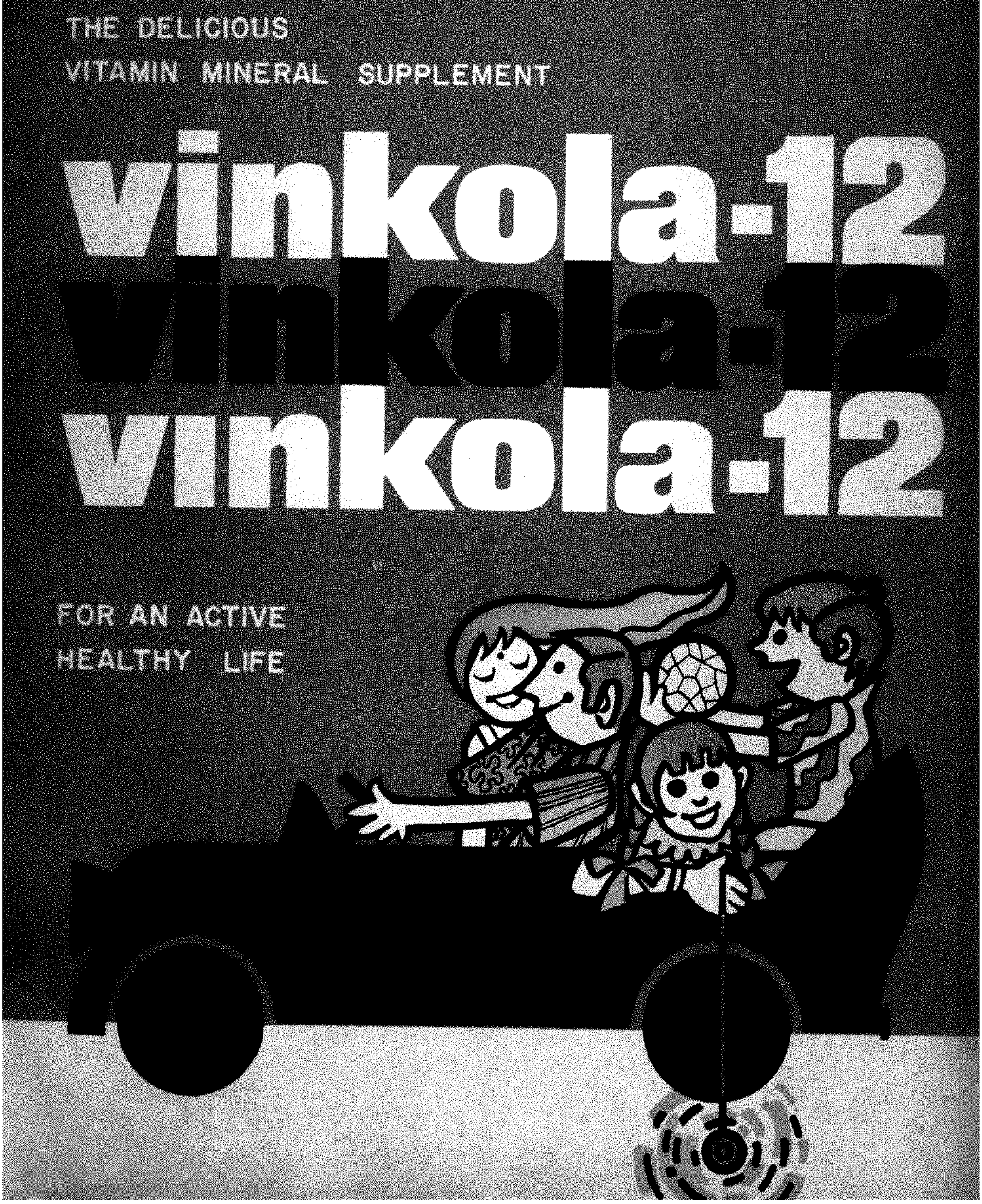
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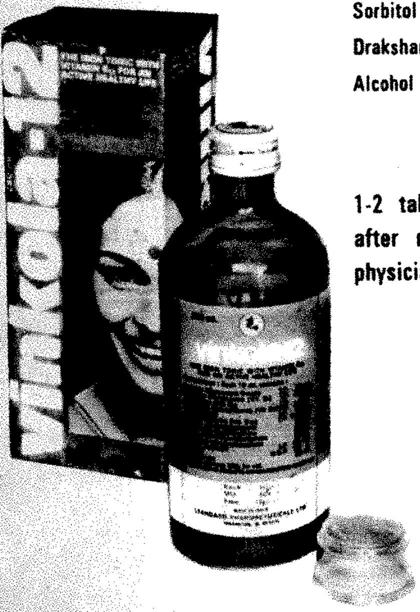

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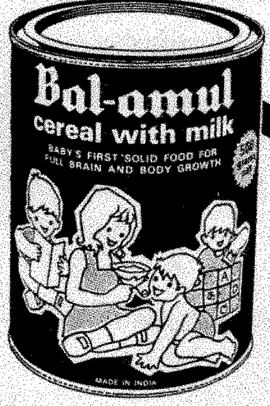

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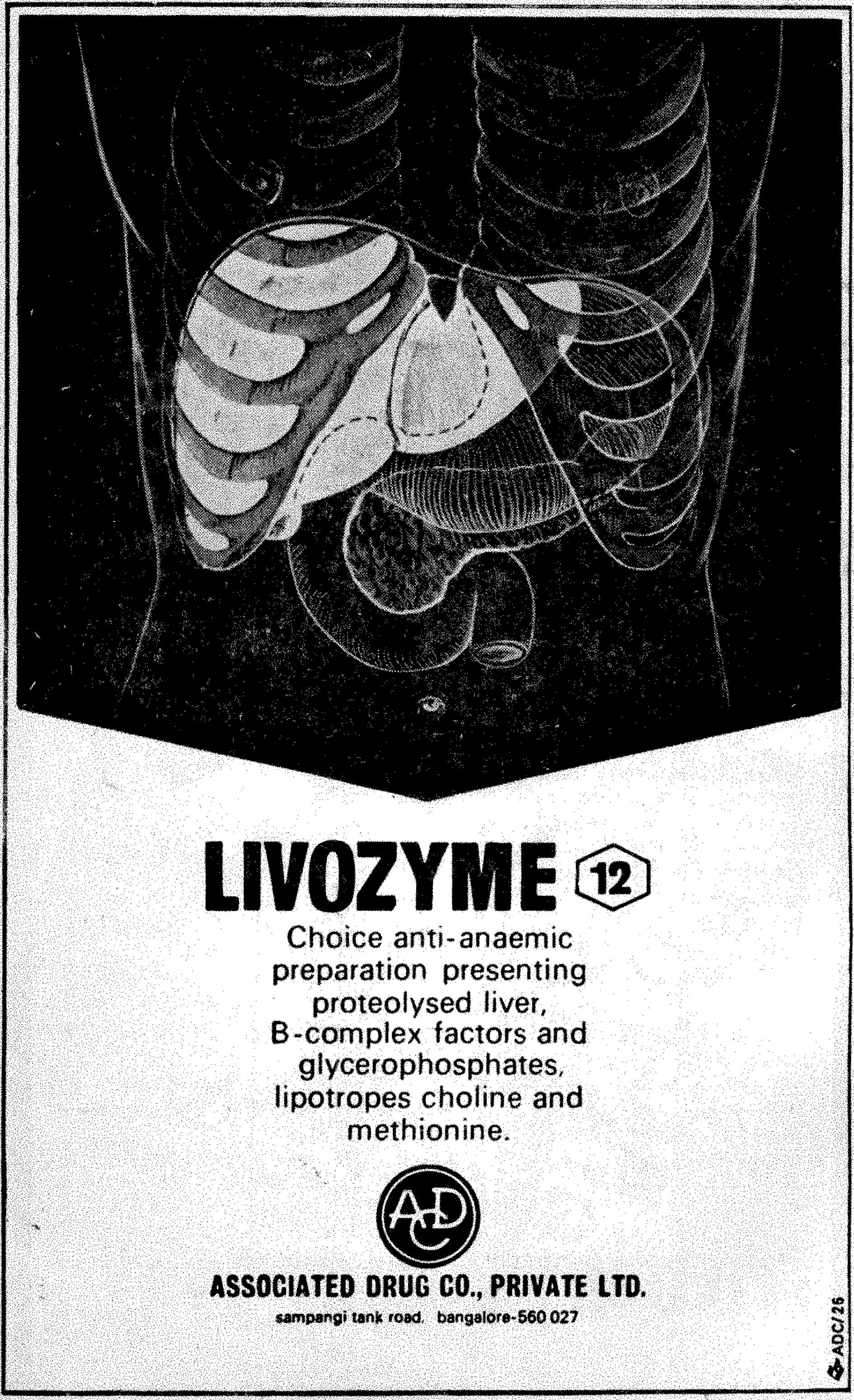

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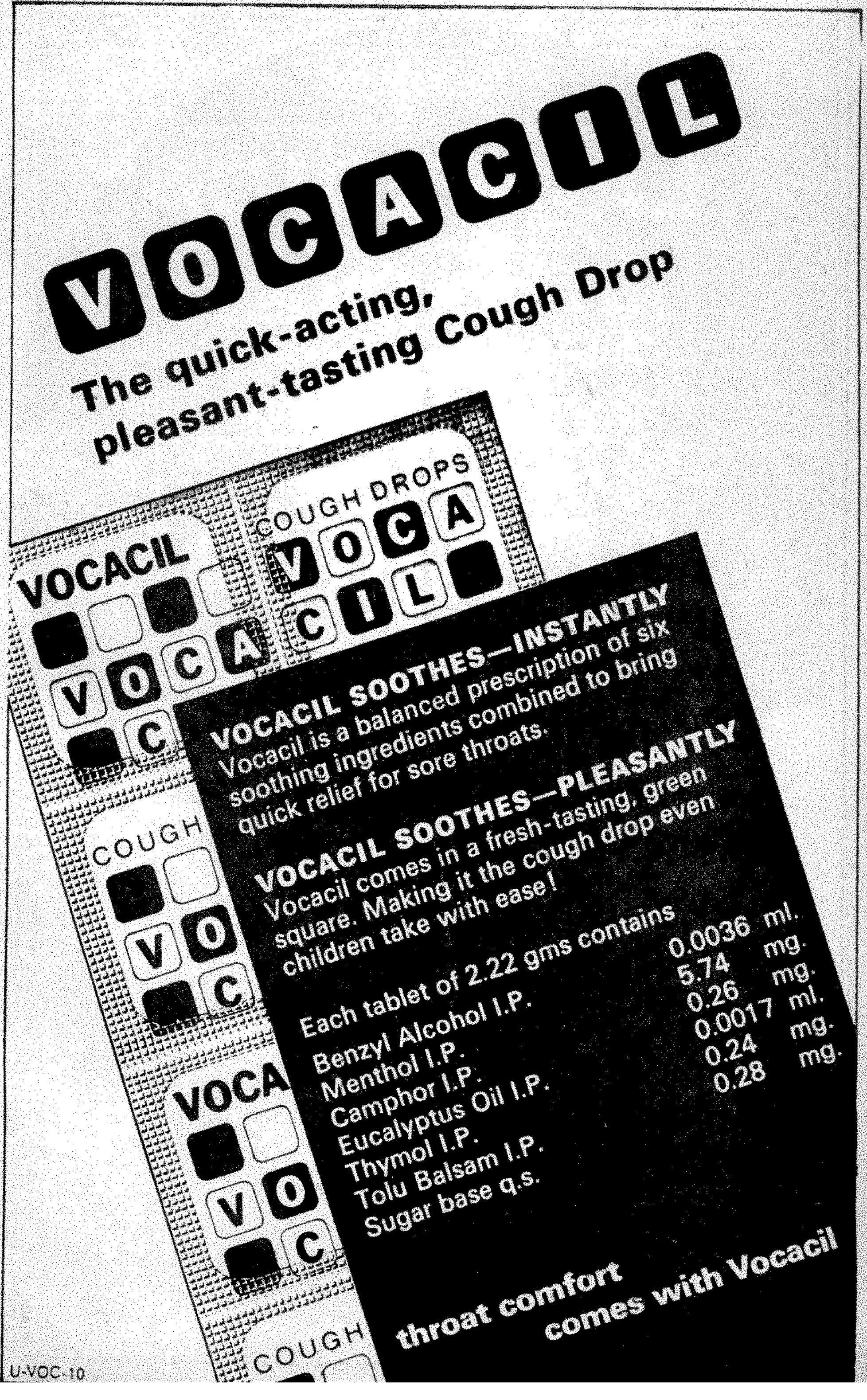

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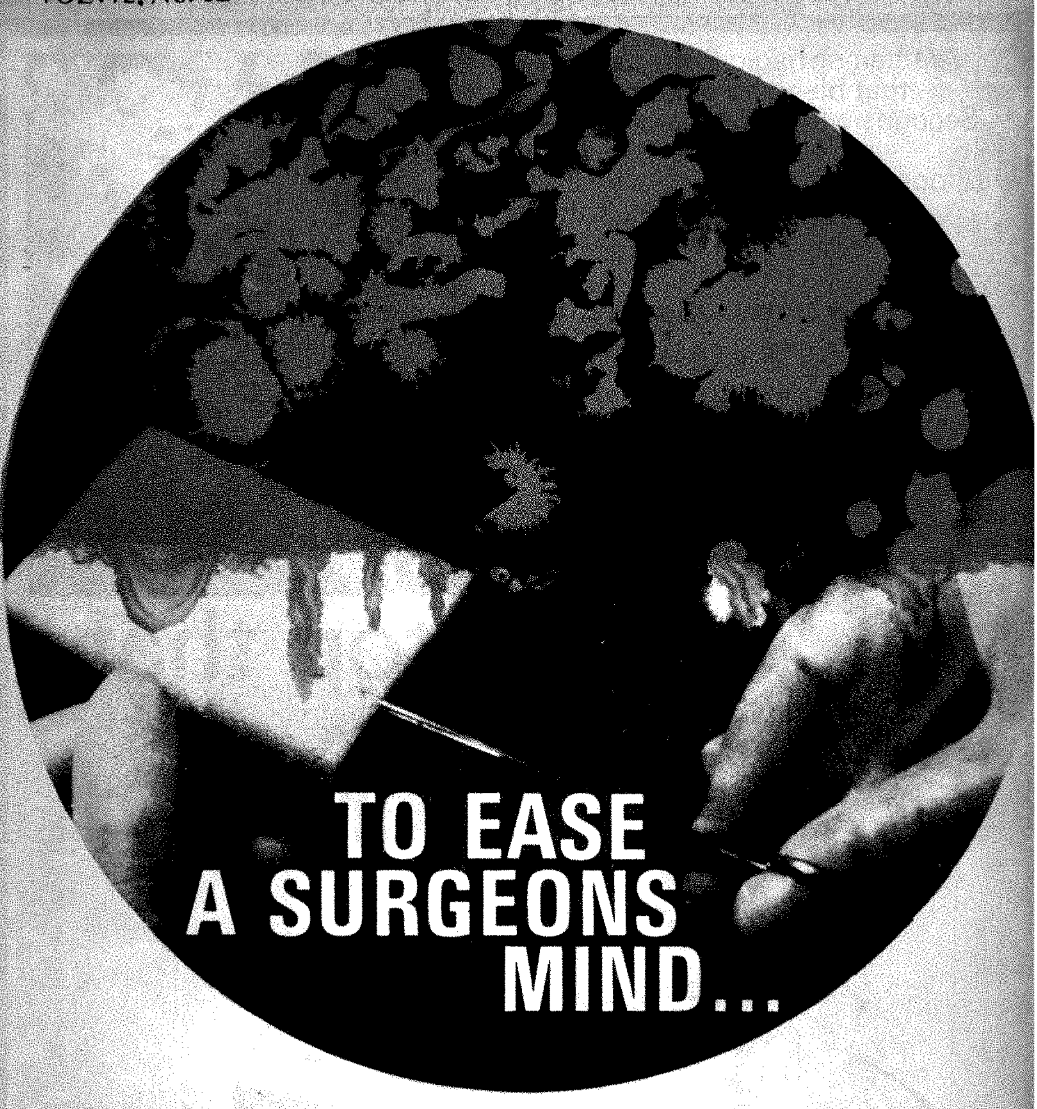

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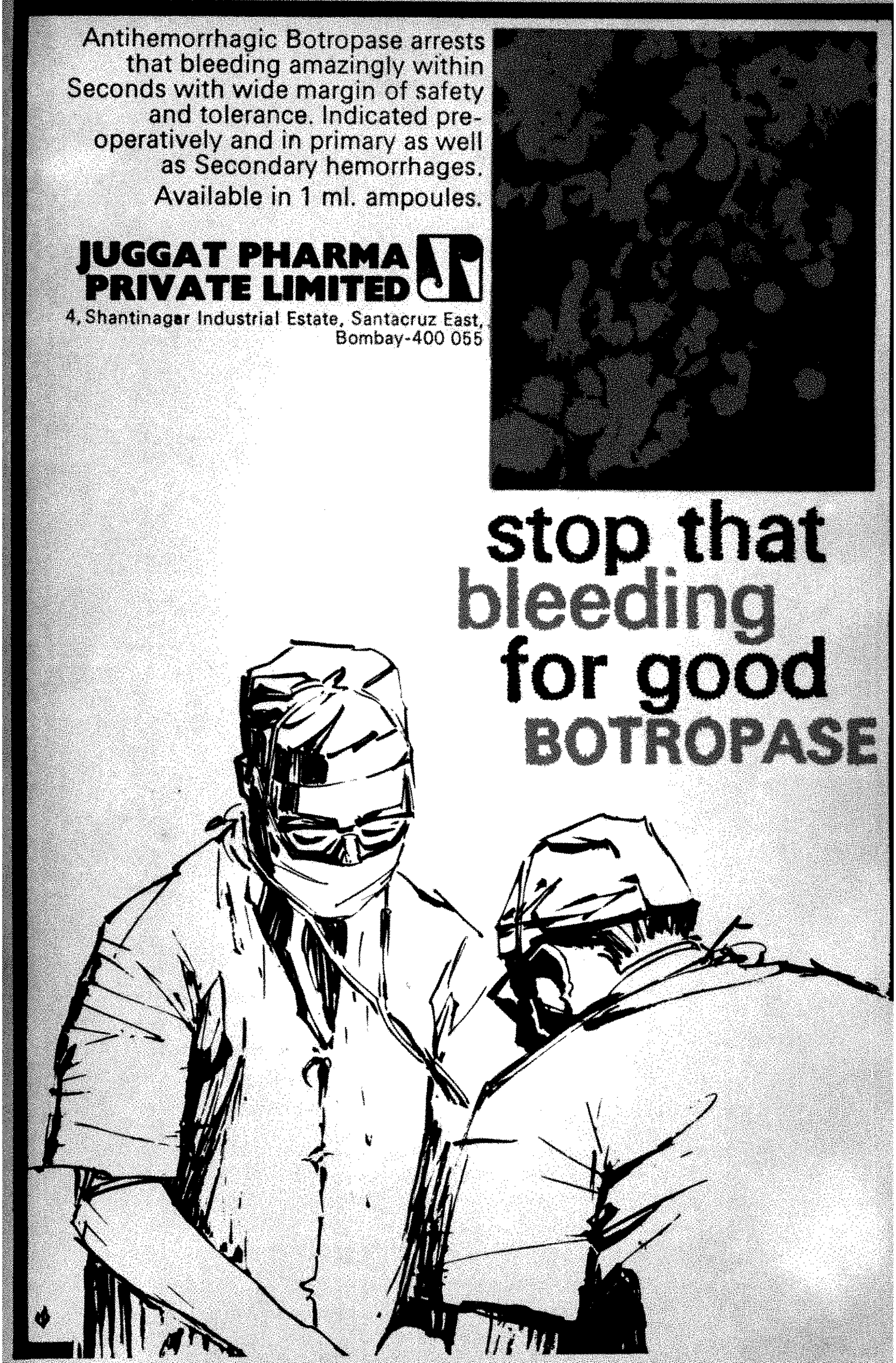

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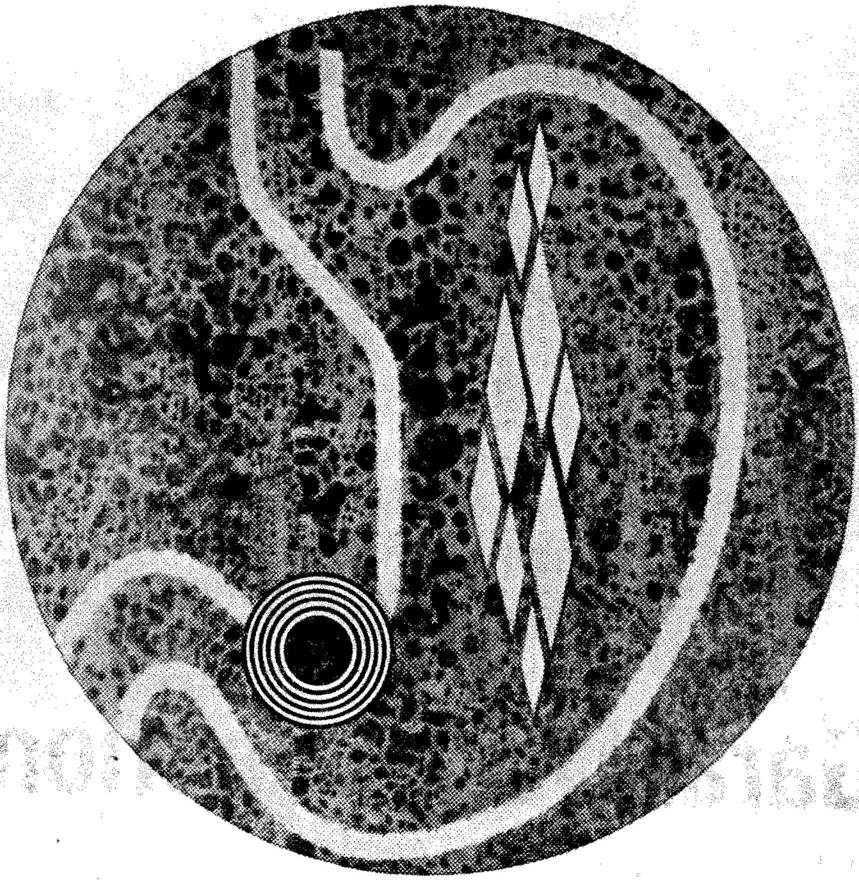

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—Agarwal, K.C. and Chitkara, N.L.,
Proc. 1st Asian Symp. on Gentamicin, Dec. 10, 1973.

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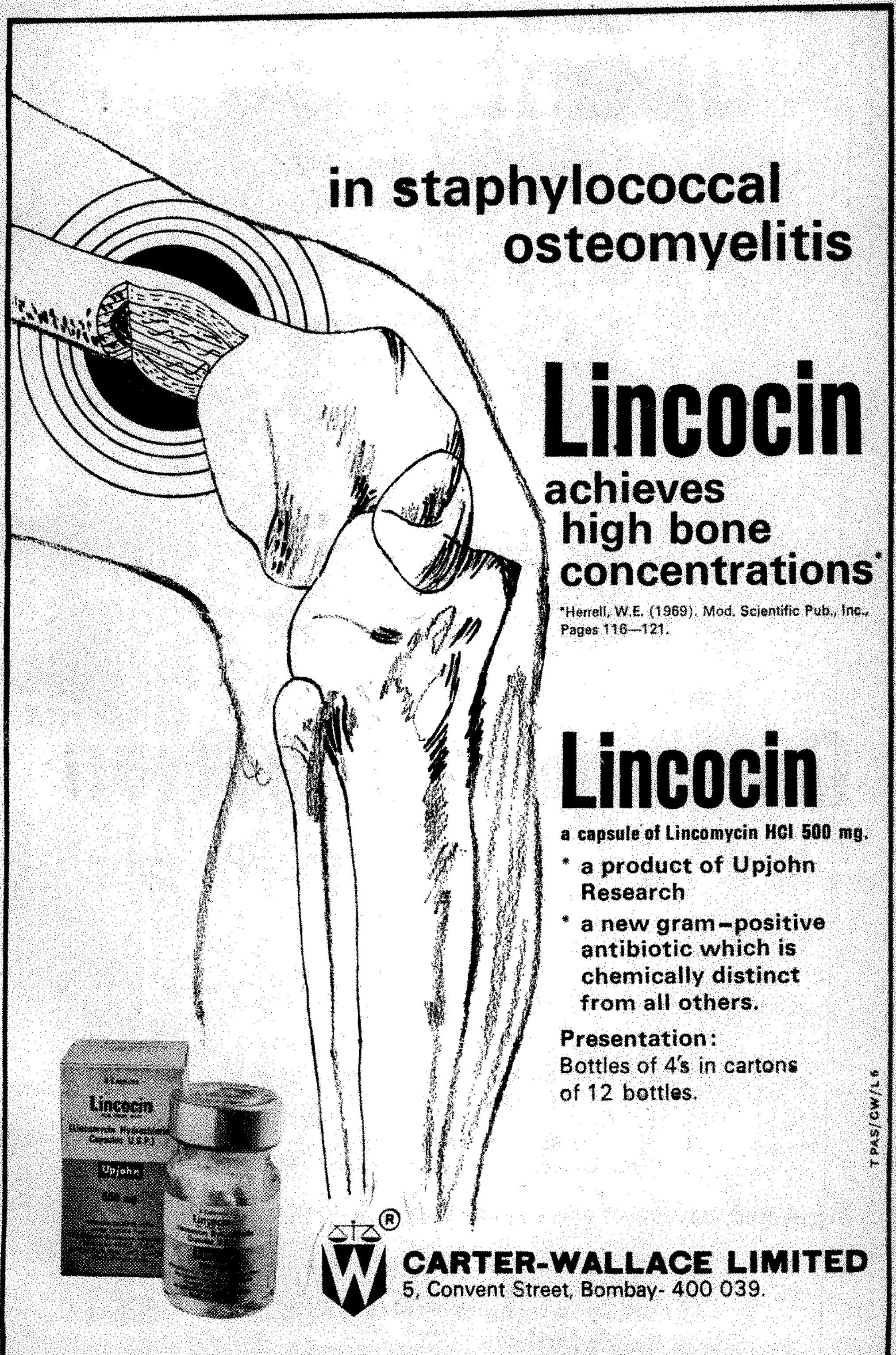

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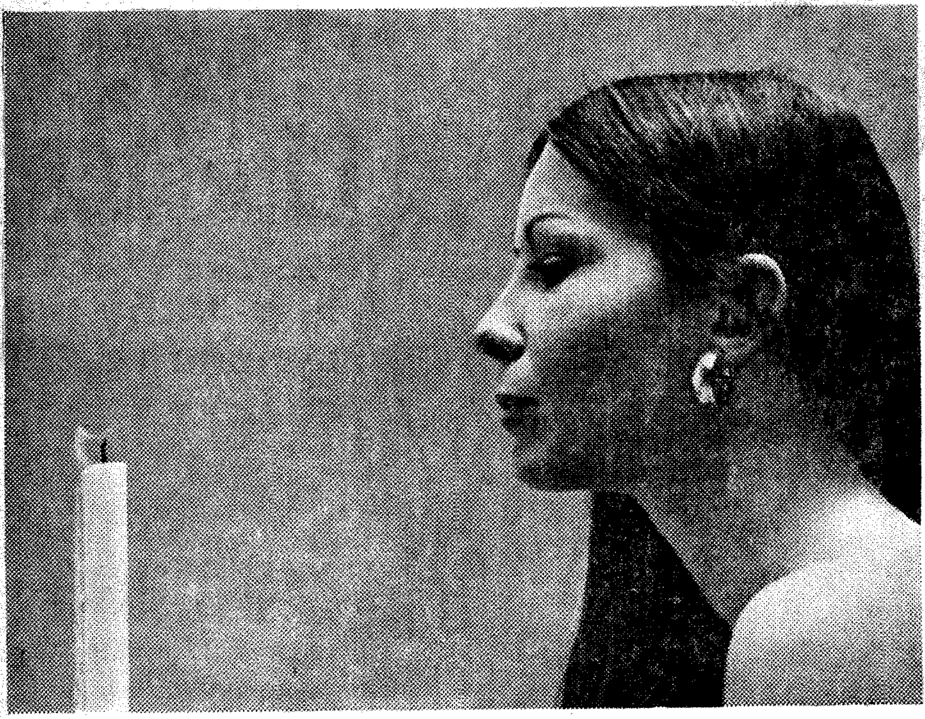

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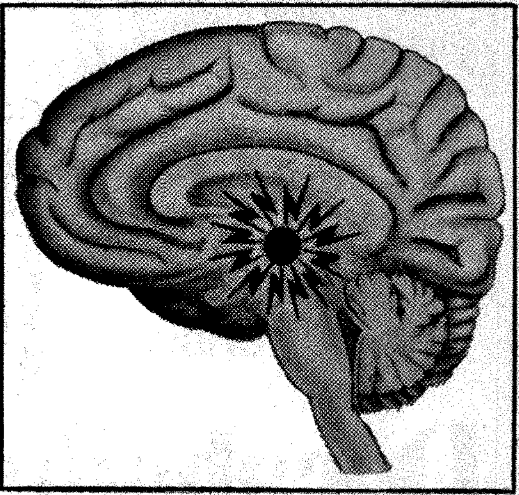

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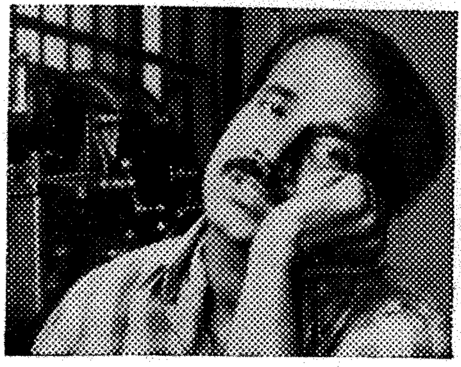

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The British Journal of Clinical Practice
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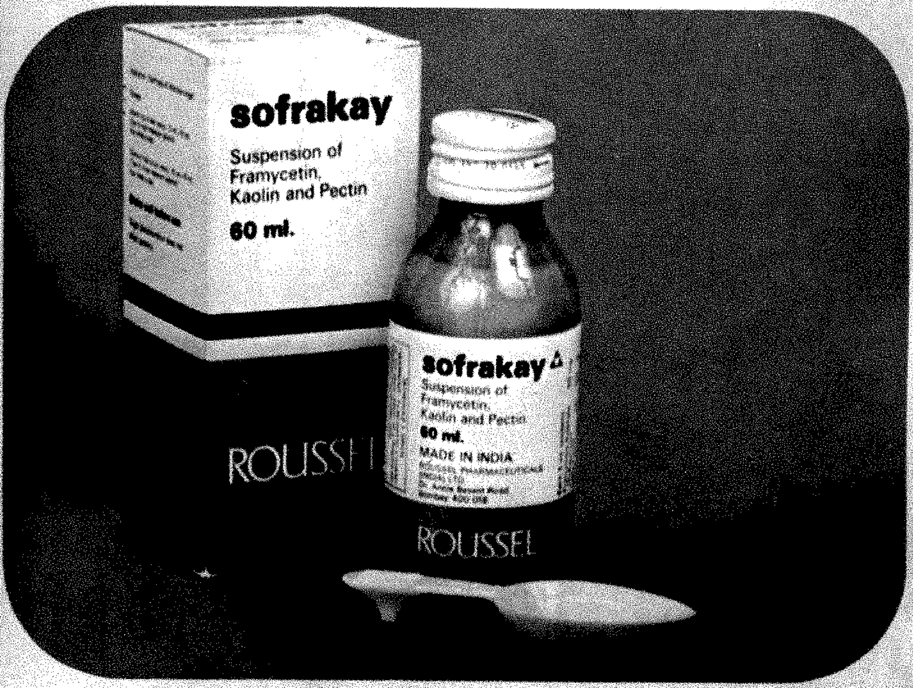

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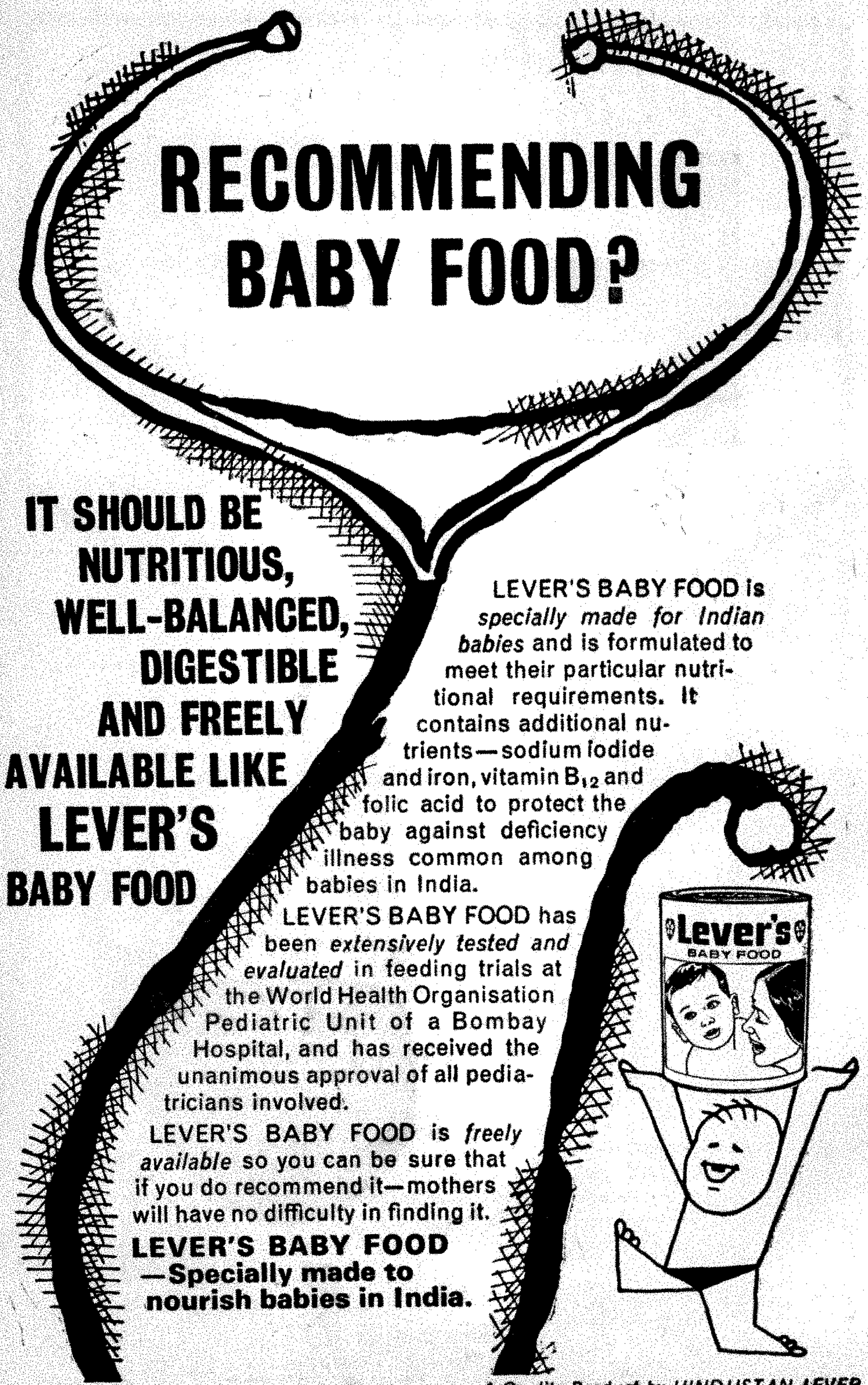

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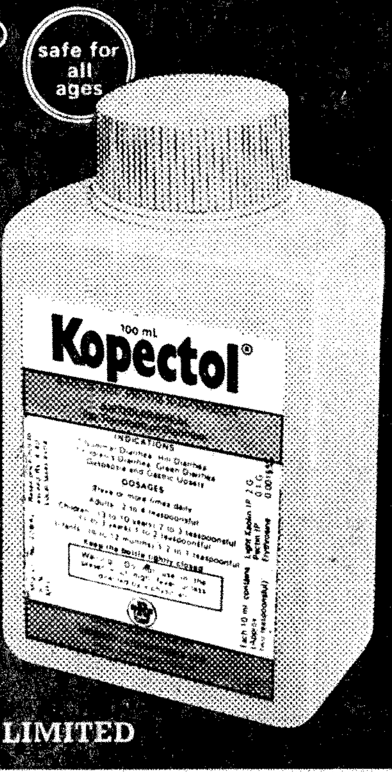

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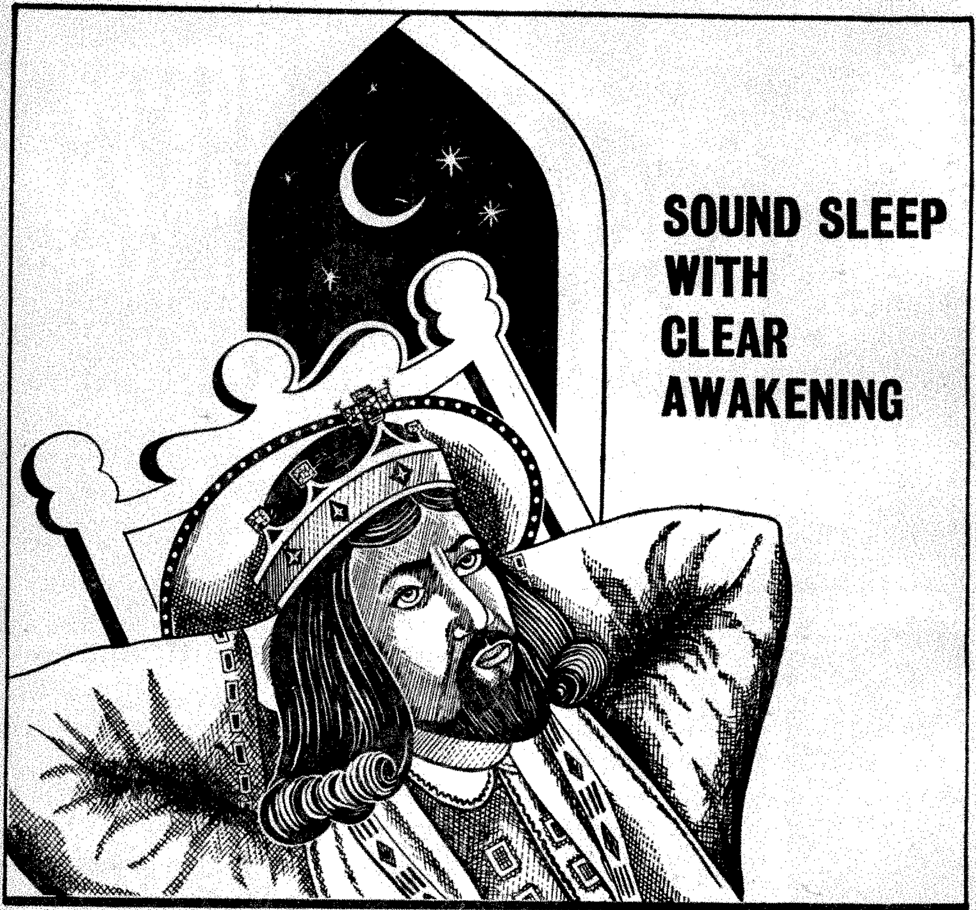

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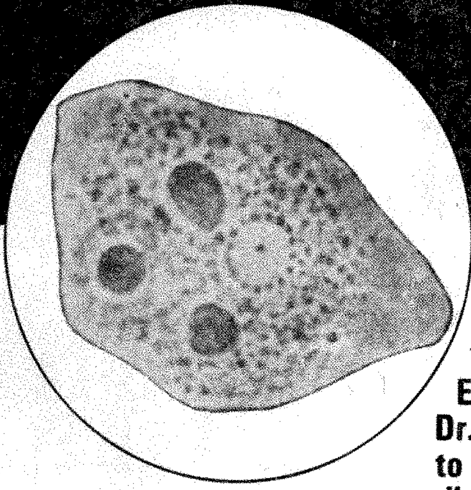

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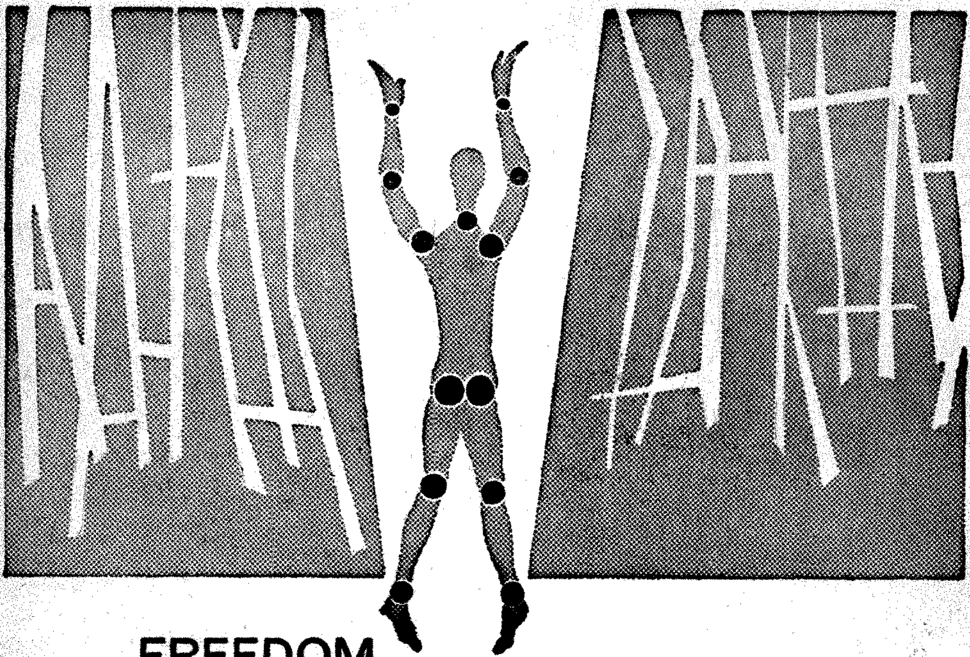

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Original Articles

PLEURO-PULMONARY AMOEBIASIS IN THE DIFFERENTIAL DIAGNOSIS OF PULMONARY TUBERCULOSIS*

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Lecturer and Head of the Dept. of Tuberculosis and Chest Diseases
M.L.N. Medical College, Allahabad (U.P.)

Most chest diseases exhibit similar symptoms. Fever, pain in the chest, cough, progressive weakness and hæmoptysis may be found in almost all infections whether bacterial, viral, fungal or parasitic, malignant diseases of lung, pleura or mediastinum and collegen diseases. The X-ray appearances may also mimic each other in some of them. There is no symptom which frightens the patient more than hæmoptysis, which is common in tuberculosis; there are however, other conditions in which hæmoptysis may often occur, as well as other symptoms similar to those of tuberculosis may be present; unfortunately they are not thought of and the patient is kept on antituberculous treatment sometimes at great risk to his health and even his life. One such condition is pleuro-pulmonary amœbiasis, which though not very common is often not suspected. Pulmonary amœbiasis should be kept in mind whenever there are signs in the lower part of the chest and there is shadow in the right lower zone and even left lower zone which cannot be differentiated from the liver shadow and when investigations for any other ætiology are not fruitful and when there is no response to antibiotic or antitubercular therapy. There should be no hesitation in making therapeutic tests. I am attempting in this paper to explain the differential early diagnose of pulmonary amœbiasis from tuberculosis in the earliest stages and treat the condition properly.

---

*Specially contributed to the 'ANTISEPTIC'.

Material and methods.—The 25 patients compressed in the present study were selected from those admitted to the Department of Tuberculosis and Chest Diseases, GSVM Medical College, Kanpur. Though a large variety of patients with broncho-pulmonary diseases are admitted and treated in this department, generally some are also often referred whenever a differential diagnostic problem arises. Moreover, there are numerous patients, who come with an initial diagnosis made elsewhere of pulmonary tuberculosis, even treated there for that complaint who on detailed investigations here turned out to be suffering from pleuro-pulmonary amœbic disease.

Only those patients have been included in this study whose clinical records, serial skiagrams, and follow up records after discharge from hospital were available and complete enough for evaluation and diagnosis.

TABLE I

Showing the diagnostic criteria used in the study

Sl. No.	Diagnostic criteria	No. of cases and percentage
1	Past history of dysentery	10 or 40
2	Basal lesion Right 24 Left 1	25 or 100
3	Palpable, tender liver	18 or 72
4	Leucocytosis	18 or 72
5	Eosinophilia	13 or 52
6	Anchovy sauce coloured sputum	8 or 32
7	Anchovy sauce coloured pleural pus	7 or 28
8	Anchovy sauce coloured liver pus	2 or 8
9	Entamoeba in stool	5 or 20
10	Entamoeba in pleural fluid	2 or 8
11	Entamoeba in sputum	2 or 8
12	Suggestive flouroscopic findings	19 or 76
13	Suggestive radiological findings	17 or 68
14	Response to specific therapy	24* or 100

*One patient died before we could start specific treatment.

Table II

Showing the age incidence

Age group	Number of patients and percentage	Maximum age incidence
10-20 years	4 or 16	
21-30 ,,	10 or 40	The common age incidence 60% was in the 3rd and 4th decades
31-40 ,,	5 or 20	
41-50 ,,	3 or 12	
51-60 ,,		
61-70 ,,	1 or 4	
Total	25 100	

The youngest patient was 12 years old and the oldest was 65

Table III

Showing the sex incidence

Sex	Number of patients and percentage
Males	18 or 72
Females	7 or 28

Rates. M : F = 2.5 : 1

Table IV

Showing the occupations of the patients

S. No.	Occupation	Number of patients and percentage
1	Farmers	7 or 28
2	Labourers	5 or 20
3	Domestic workers	5 or 20
4	Shop-keepers	4 or 16
5	Nurses	1 or 4
6	Students	3 or 12

4 patients were addicted to alcohol, 21 were teatotallers. 10 out of 25 smoked. Most patients were from low socio-economic group.

Table V

Showing the duration of illness

Duration of illness	Number of patients and percentage
Less than 15 days	3 or 12
15 days to 1½ months	8 or 32
1½ months to 3 months	7 or 28
3 months to 6 months	2 or 8
6 months to 1 year	5 or 20

The duration of illness was taken from the time the patient first became aware of his symptoms.

Table VI

Showing the nature of onset of symptoms

Onset	Number of patients and percentage
Sudden	11 or 44
Gradual	14 or 56

Table VII

Showing the incidence of symptoms in the 25 patients

Sl.No.	Symptoms	Number of patients and percentage
1	Cough	25 or 100
2	Expectoration	19 or 76
3	Fever	22 or 88
4	Pain in the chest	20 or 80
5	Hæmoptysis	13 or 52
6	Pain in abdomen	6 or 24
7	Pain in the right shoulder	2 or 8
8	Loss of weight	5 or 20
9	Loss of appetite	3 or 12
10	Breathlessness	2 or 8
11	Loose motion	2 or 8

Table VIII

Showing the incidence of initial symptoms

Symptoms	Number of Patients and percentage
Fever	10 or 40
Pain in the chest	6 or 24
Cough	6 or 24
Pain in the abdomen	2 or 8
Loose motion	1 or 4

The above analysis is based entirely upon the history given by the patients.

A history of previous diagnosis and treatment in detail was obtained from the patients. 16 or 64% of 25 patients were

TABLE IX

Showing the site of the physical signs in the chest

Site of physical signs	Number of patients and percentage
Right-sided physical signs	22 or 88
Left-sided physical signs	1 or 4
No abnormal signs	2 or 8

diagnosed elsewhere at sometime or other as cases of pulmonary tuberculosis and had received antituberculer treatment. One patient with right sided pleural effusion was getting antitubercular treatment with cortisone and her liver enlargement had been overlooked. A careful examination was made for the presence of *Entamoeba histolytica* and no response to antitubercular drugs gave a clue to the diagnosis of pleuropulmonary amœbiasis after some time.

Toxæmia was present in four patients, and manifested with fever. Nutrition was poor on an average in 17 or 68% of the patients. Anaemia and clubbing were present in 68% and 24% of the patients respectively.

TABLE X

Showing physical signs in the chest

S. No.	Physical signs in the chest	Number of patients and percentage
1	Diminished movement of chest	18 or 72
2	Bulging in right lower chest	4 or 6
3	Tenderness in right lower chest	2 or 8
4	Oedema in right lower chest	2 or 8
5	Shifting of trachea	8 or 32
6	Shifting of apical impulse	3 or 12
7	Altered vocal fremitus	10 or 40
8	Impairment or dullness	22 or 88
9	Diminished breath sound	16 or 64
10	Crepitations	15 or 60
11	Ronchi	3 or 12
12	Signs of consolidation	1 or 4
13	Pleural rub	2 or 8

The liver was palpable and tender in 18 or 78% of patients. In one case a palpable mass was present in the right iliac fossa which was diagnosed to be amœboma and right enough it disappeared after antiamœbic treatment.

TABLE XI

Showing the diagnostic investigations made

Investigations made for diagnosis	Number of patients and %
Blood-examination—	
Anaemia	17 or 68
Leucocytosis	18 or 72
Eosinophilia	13 or 52
Anchovy sauce colour—	
Liver pus	2 or 8
Pleural pus	2 or 8
Sputum	8 or 32
Entamoeba histolytica present—	
in stools	5 or 20
in sputum	2 or 8
in the pleural pus	2 or 8

TABLE XII

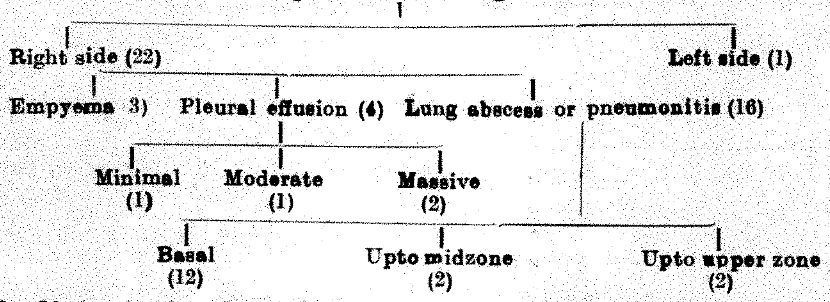
Showing the results of fluoroscopic study of 25 patients

Fluoroscopic findings	Number of patients and %
Restricted movement of the right diaphragm	4 or 16
Immobility of the diaphragm : Right 5 Left 1	6 or 24
Immobility with elevation of the right diaphragm	9 or 36
Normal movement of diaphragm	6 or 24

Skiagrams of the chest did not reveal any abnormality in 2 patients. In the remaining 23 patients, the thoracic location of the disease was classified as shown below :—

TABLE XIII

Showing the location of lung lesion



Radiological abnormality was present in 23 of the 25 patients. With the exception of 6 patients with pleural effusion and empyema the remaining 17 in the series showed one or other of the following radiographic patterns in the posterior-anterior or lateral views.

TABLE XIV

Showing the Radiological patterns seen in 17 patients

	Types of radiological appearance	Number of patients and percentage
1	A fluffy irregular opacity overlying the dome of the diaphragm.	6 or 35·3
2	Homogeneous dome-shaped opacity occupying the supradiaphragmatic position.	5 or 29·4
3	A triangular opacity in the right costophrenic angle	2 or 11·8
4	Slight haziness overlying the right or left dome of the diaphragm obscuring the cardiophrenic angle with prominence of hilar shadow	2 or 11·8
5	Dense homogeneous opacity occupying the whole of the right hemithorax without shift of the mediastinum.	2 or 11·8

The effect of antiamœbic drugs was dramatic in all patients. The drugs were used were chloroquin diphosphate and/or Emetine hydrochloride.

Discussion.—To quote Stein and Sheimmel, "The syndrome of fever, cough and hæmoptysis with abnormality or a cavity in the chest skiagram, is not always tuberculosis. Failure to identify the tubercle bacilli even with diligent examination is sufficient reason to abandon the diagnosis of tuberculosis, previously made."

Our knowledge of pulmonary diseases is rapidly increasing and by now it is well known that pleuro-pulmonary amœbiasis, a common nontubercular condition, simulates-pulmonary tuberculosis radiologically and even clinically, and an erroneous diagnosis may result in untold suffering to the patient. In the present study 64% patients with pleuro-pulmonary amœbiasis had been diagnosed and treated outside as cases of pulmonary tuberculosis possibly on the evidence of hæmoptysis or pleural effusion.

Hæmoptysis, a common symptom of pulmonary tuberculosis was found in 29·6% by Mœrsh (1952) and 30% by Rao (1960). This common symptom was seen in 52% in our present study of 25 patients with pleuro-pulmonary amœbiasis; of these 32% had typical anchovy sauce-type of sputum, cough, expectoration, pain in the chest and fever, the important manifestations of pulmonary tuberculosis were also found in this series of patient with pleuro-pulmonary amœbiasis. Referred chest pain, tender right lower intercostal spaces, localised basal signs and enlarged, tender liver were all of great help in diagnosing pleuro-pulmonary amœbiasis.

In the differential diagnosis of pulmonary amœbiasis, searching laboratory investigations are indicated and it might be profitable to underline certain aspects in the examination of the sputum. Since this is the most widely used and helpful test in the diagnosis of "Routine chest cases" pulmonary tuberculosis enters into the differential diagnosis of practically every disease which may affect the lung.

Naked eye sputum examination should not be neglected. Anchovy sauce sputum is usually found in pulmonary amœbiasis and most of these cases are missed because a macroscopic examination had been overlooked. This type of sputum is diagnostic of pulmonary amœbiasis. Dormer and Friedlander (1941) found it in 42·8%, Ananthachari *et al* (1964) 40%; Mital *et al* (1966) in 25%; and Menon (1963) in 13·3%. In our series anchovy sauce sputum was the main diagnostic criterian in 32%. The presence of the vegetative forms of *Entamoeba* in the sputum is a sure sign of amœbic infection, but its absence does not exclude the existence of this condition. Webster (1960) demonstrated the presence of *Entamoeba* in the sputum in all of his 10 patients. While Tokaro and Bond (1958) in 28%, Menon (1963) in 6 6%, Mital *et al* (1966) in 16·6%. In the present study of 25 patients, *Entamoeba histolytica* was found in 2 or 8% of the patients.

Anæmia, leucocytosis and eosinophilia were found in our patients and these were also reported by various other workers *e.g.*, (Dormer *et al* 1941, Kapoor *et al* 1961, Kashiwal *et al* 1961, Menon 1963, Vyas *et al* 1963, and Nagrath 1966).

Pleural effusion is very common in tuberculosis and also in certain nontuberculosis conditions. So the correct ætiological diagnosis becomes an important factor before any treatment is started. It is common practice to treat all cases of pleural effusion on anti-ttubercular line. In these patients a thorough examination of the abdomen and proper history taking must be made. The difficulty in diagnosis however, arises when the clinical signs in the liver are not sufficiently diagnostic.

The fluoroscopic examination of the chest has proved to be a valuable adjunct in the diagnosis of pleuropulmonary amœbiasis. 76% of our cases had shown some kind of abnormality in the diaphragmatic movements, Kasliwal *et al* (1961) found in 58 8% and Menon (1964) observed in 41·6% of their patients. Radiological pattern in hepatopulmonary amœbiasis is still a subject of discussion. There are certain characteristic rœntgenographic appearances during the early stage of pulmonary involvement which are highly suggestive and helpful in the diagnosis of this condition. Dormer and Friedlander (1941), Hughes and Westphal (1947), Webster (1956—1960) and Menon (1964). Workers on this disease have found five types of rœntgenographic appearances in their patients. Chaudhari and Chaudhari (1946), Dormer and Friedlander (1957), Ochsner and De-Bakey (1936) and Kasliwal *et al* (1961) have stressed the importance of the use of emetine and/or chloroquin as an important diagnostic therapeutic test in hepatopulmonary amœbiasis, especially so when antibiotics and other therapeutic measures have failed to produce any significant clinical improvement. So there seems to be little justification in delaying the trial of amœbicidal drugs when the diagnosis of pleuro-pulmonary amœbiasis is suspected (Vyas *et al* 1963). In our series the diagnosis of pulmonary amœbiasis was confirmed only in 4 patients in whom we could demonstrate amœba in the sputum and pleural fluid. In the rest the diagnosis was suspected, due to basal involvement of the lung, not responding to antibiotics or antitubercular drugs, liver enlargement, the presence of *Entamoeba* in the stools and of anchovy sauce pus in sputum, In these 21 patients emetine and/or chloroquin was given as diagnostic therapeutic test.

Summary and Conclusion.—1. 25 patients with pleuro-pulmonary amœbiasis were studied. It is concluded that signs, symptoms and even radiological appearances of pleuro-pulmonary amœbiasis mimic of pulmonary tuberculosis and so this entity is most often missed.

2. A past history of amœbiasis, tenderness in the right hypochondrium or tenderness of the lower intercostal spaces are important landmarks in the diagnosis of this condition.

3. Anchovy sauce material either in the sputum, liver or in the pleural aspirate is diagnostic of this condition.

4. The presence of *Entamoeba* in the sputum, pleural fluid and liver abscess is confirmatory of the diagnosis.

5. Basal lesions especially on the right side not responding to antibiotics or antituberculous chemotherapy should be subjected to " therapeutic trial of amoebicidal drugs.

6. Differential diagnosis with pulmonary tuberculosis is discussed. It was stressed that a wrong diagnosis may cause immeasurable suffering to patients.

Acknowledgement.—I am grateful to Dr. O.P. Mital, M.D., F.A.C.S, F.C.C.P. T.D.D., Professor and Head of the Deptt. of Tuberculosis and Chest diseases, G. S. V. M. Medical College, Kanpur for his valuable advance and guidance, which helped me a great deal.

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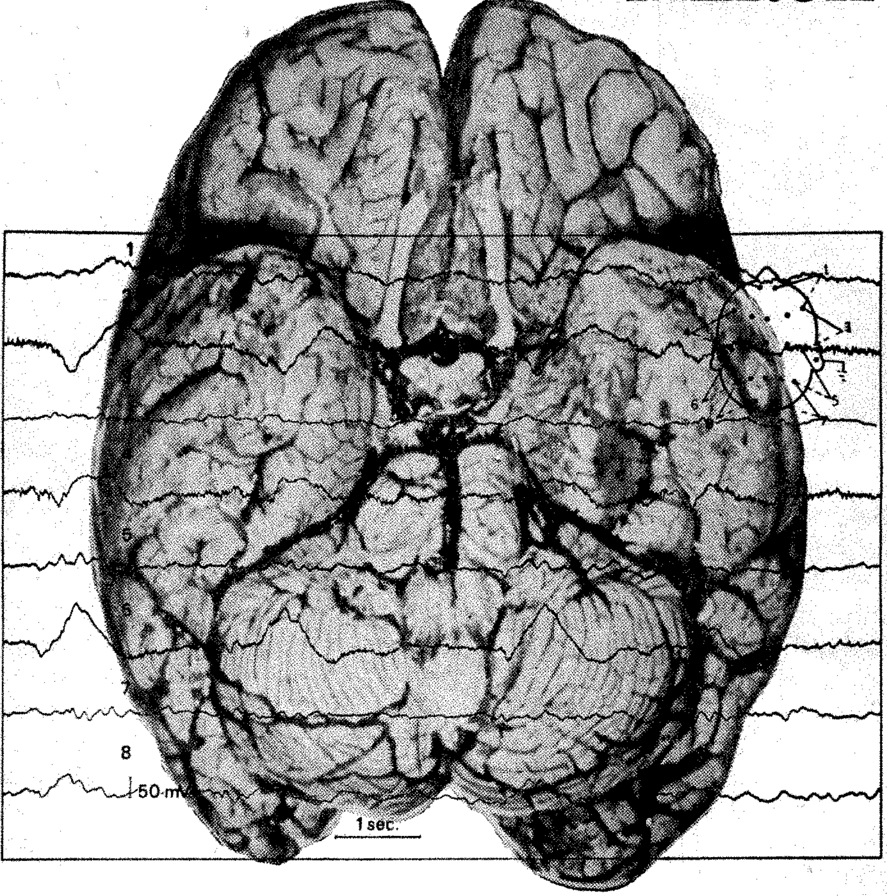

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T-PAS/EN/61

LIVER CHANGES IN THYROTOXICOSIS*

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INTRODUCTION :—We read in the literature that the liver is involved both structurally and functionally in thyrotoxicosis. Interest in the subject is increasing since Weller (1933) demonstrated degenerative changes with fatty metamorphosis, focal and central necrosis, and circulatory stasis. He also noted simple atrophy and subacute toxic atrophy or the so called toxic cirrhosis. Moschcowitz (1946) found hepatic cirrhosis in 11 out of 31 patients, subjected to autopsy who suffered from toxic goitre or exopthalmic goitre. Dooner *et al* (1967) were of the view that the hepatic functions in thyrotoxicosis are inconsistently abnormal and do not mirror the anatomic changes. Recently ultra-structure study of 7 thyrotoxic patients by Klion *et al* (1971) revealed nonspecific abnormalties of hepatocellular organelles, such as enlarged mitochondria, hypertrophy of endoplasmic reticulum and glycogen depletion and did not co-relate with the functional abnormalities.

Keeping these controversial views in mind, twelve uncomplicated patients with thyrotoxicosis were studied for liver functions and histopathological abnormalities at the Osmania General Hospital, Hyderabad.

Material and methods.—Twelve patients with uncomplicated thyrotoxicosis were selected for this study. All routine investigations like complete urine and blood examinations ESR, blood-urea, blood sugar, E. C. G. and skiagram of the chest, were made. The following investigations were carried out in addition.

Thyroid function tests :—(1) Sleeping pulse rate; (2) B.M.R. (3) Radioactive iodine uptake studies. (4) Serum cholesterol.

Liver function tests :—(1) Serum bilirubin, (2) Vandenbergh reaction, (3) Serum proteins, Total, Albumin and Globulin, (4) TTT (Thymol turbidity test), (5) Serum alkaline phosphatase, (6) SGOT and SGPT, (7) Prothrombin time, (8) BSP

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*Specially contributed to the 'ANTISEPTIC'.

(Normal value 6 10% retention in the blood drawn at 45 minutes after injecting BSP-5mg/KG body-wt). (9) Serum electrophoresis, and (10) Liver biopsy; Hæmatoxylin and eosin stain was used in all cases studied for histopathological changes. PAS (Periodic acid Schiff) staining was mede to demonstrate the content of the glycogen in the liver cells. (*see* Table I, *overleaf*).

Discussion.—LIVER FUNCTION TESTS :—(1) *Serum bilirubin :* In the 12 patients studied, there was no rise in serum bilirubin levels. Klion *et. al.* (1971) also did not observe raised serum bilirubin in any of their seven patients with thyrotoxicosis.

In thyrotoxicosis, thyroxine and other increased metabolites may compete with bilirubin for hepatic intake, conjugation and excretion. But when serum bilirubin increases and jaundice are seen, causes other than thyrotoxicosis like defects in the transfer of bilirubin or the defects in the intracellular conjugation of bilirubin should be suspected. In complicated cases of thyrotoxicosis, there may be jaundice which may be due to associated congestive heart failure (Movitt, *et al*, 1955).

(2) *BSP excretion tests* :—This test is a very sensitive test to assess the presence of liver damage. BSP test was normal in all the 12 indicating that there was no significant liver damage in cases of thyrotoxicosis. BSP test was abnormal in 5 of 19 patients in the study made by Bourel *et. al*. (1971). BSP retention was also noted by Weber (1968) in his study. According to the observers many diverse processes such as partial bile duct obstruction, intrahepatic duct obstruction and cholestasis or decreased hepatic blood flow are involved in abnormal retention.

(3) *Serum alkaline phosphatase* :—This was raised in 3 (25%) of the 12 patients we studied. It was increased in 2 out of 7 in the series of Klion *et al* (1971), : in 10 out of 15 patients of Dooner *et al* (1967) ; and in 8 out of 19 patients of Bourel *et al* (1971). Piper (1947) found increase in serum alkaline phosphatase in 10, without any evidence of bone disease.

Increase in the enzyme level indicates impaired hepatic excretion in the absence of bone disease. In the present series there was no bone disease and there was also no other evidence of impaired hepatic excretion in the 3 patients in whom the enzyme level was increased. The findings of the above authors would show that increase in the enzyme levels is believed to be due to the liver dysfunction resulting from thyroxine induced nutritional deficiencies.

Other biochemical liver functions were normal (*see* Table No. II).

TABLE I

Case No.	Sex	Age in yrs	Duration of the illness	Sleeping pulse rate/mt.	Thyroid enlargement.	Exophthalmos.	Heart.	Enlargement of liver.	BMR%	I 131 uptake/ 24 hrs.	Serum cholesterol. mg./100 ml.	Remarks.
1	F	35	10 yrs.	115	+	+	—	—	+50	60%	2 0	Primary thyrotoxicosis
2	F	32	3 yrs.	110	+	—	—	Just felt	+54	60%	193	,,
3	M	40	2 yrs.	98	—	+	—	—	+45	60%	179	,,
4	F	56	8 months	140	+	—	—	—	+51	98%	153	,,
5	F	35	2½ months	110	+	—	—	—	+50	70%	130	,,
6	F	18	56 months	115	+	—	LVH	—	+39	55%	250	,,
7	F	18	3 yrs.	104	+	+	—	—	+55	72%	200	,,
8	F	20	6 months	130	+	+	—	Just felt	+35	75%	150	,,
9	F	60	6 months	90	Adenoma	—	Atrial fibrillation.	,,	+60	65%	167	Toxic adenoma of thyroid with atrial fibrillation
10	M	20	2 yrs.	90	+	—	—	,,	+50	70%	126	Primary thyrotoxicosis
11	F	20	3 months	120	+	+	—	—	+60	78%	127	,,
12	F	25	6 months	106	+	+	—	—	+40	55%	187	,,

TABLE II

Case No.	Serum bilirubin mg/100 ml.	Serum proteins gm.			TTT Units	Serum alkaline phosphatase KA units	SGOT units/ 100 ml.	SGPT units 200 ml.	Prothrombin time in seconds		BSP% retention after 45 minutes	Serum electrophoresis	Remarks
		total	albumin	globulin					test	control			
1	1·0	6·4	2·8	3·6	2·5	7	85	50	18	18	6	Normal	Normal Liver function
2	1·0	7·2	3·4	3·8	3·5	18	50	25	18	18	5	,,	Slight increase in serum alkaline phosphatase
3	1·0	6·9	3·0	3·9	3·0	13	95	55	19	19	6	Increase in gamma-globulin	Increase in gamma-globulin
4	1·0	6·5	3·0	3·5	3·0	19	60	30	21	19	5	Normal	Increase in alkaline phosphatase
5	1·0	6·3	3·9	2·4	3·0	14	90	50	19	19	5	,,	Normal liver function
6	1·0	6·5	3·5	3·0	3·0	22	90	60	20	19	5	,,	Increase in serum alkaline phosphatase
7	1·0	6·7	3·6	3·1	4·0	14	110	93	18	19	4	,,	Normal liver function
8	1·0	5·9	3·5	2·4	4·0	12	80	50	20	20	5	,,	,,
9	1·0	5·8	2·8	3·0	4·0	12	80	50	20	19	5	,,	,,
10	1·0	6·5	3·0	3·5	2·5	9	50	33	19	19	3	,,	,,
11	1·0	6·0	3·2	2·8	4·0	10	60	40	18	18	4	,,	,,
12	1·0	7·8	3·6	4·2	3·0	14	58	42	19	19	4	Increase in gamma-globulin	Increase in gamma-globulin

TABLE III

Histopathology of the Liver in Thyrotoxicosis

Case No.	Fatty infiltration	Round cell infiltration	Rarefaction of liver cells.	Cytoplasmic vacuolisation	Cytoplasmic granularity	Karyolysis Karyopykosis of nuclei	Liver cell necrosis	Liver cell degeneration	Fibroblastic proliferation	Kupffer cell proliferation	Sinusoidal, dilatation	Glycogen depletion
1	−	+	+	−	−	+	−	−	−	−	−	+
2	+	−	−	+	−	+	−	+	−	−	−	+
3	−	−	−	−	+	+	−	−	−	−	−	+
4	−	+	−	−	−	−	+	−	+	−	+	+
5	−	+	−	−	−	−	−	+	+	−	−	−
6	−	+	−	+	−	−	−	−	−	−	−	−
7	−	+	−	−	+	−	−	−	−	+	−	−
8	−	+	−	−	−	−	−	+	−	−	−	−
9	+	+	+	−	−	−	−	−	+	−	+	+
10	−	+	−	−	−	−	−	−	+	−	+	+
11	+	−	−	−	+	−	−	−	−	−	−	+
12	−	+	+	−	−	−	+	−	+	−	−	−

Histopathological changes:—The following histopathologic changes occurred in the liver in the patients we studied:—(*i*) Fatty infiltration in 25% of the cases, (*ii*) Round cell infiltration in 75% (*iii*) Glycogen depletion, in 50% (*iv*) Vacuolization of the cytoplasm in 16% (*v*) Rarefaction of the cytoplasm in 25% (*vi*) Liver cell necrosis in 16% (*vii*) Cytoplasmic granularity in 25% (*viii*)Liver cell degeneration in 25% (*ix*) Karyolysis and Karyopyknosis of the nuclei in 25% (*x*) Fibroblastic proliferation in 41% (*xi*) Kupffer cell proliferation in 8% and (*xii*) Sinusodial dilatation in 16% of the cases.

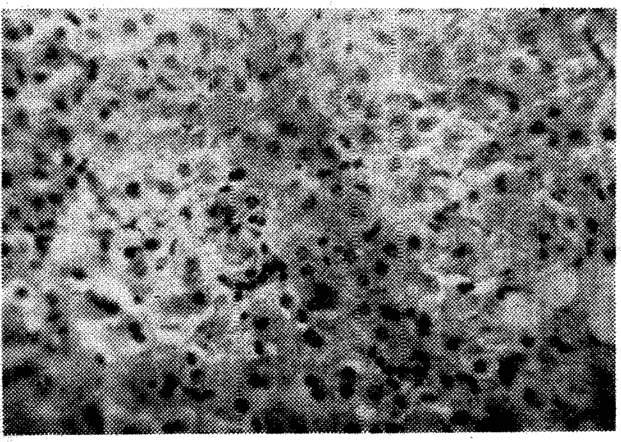

FIG. I. Fatty infiltration. 2. Cytoplasmic granularity. 3. Glycogen depletion.

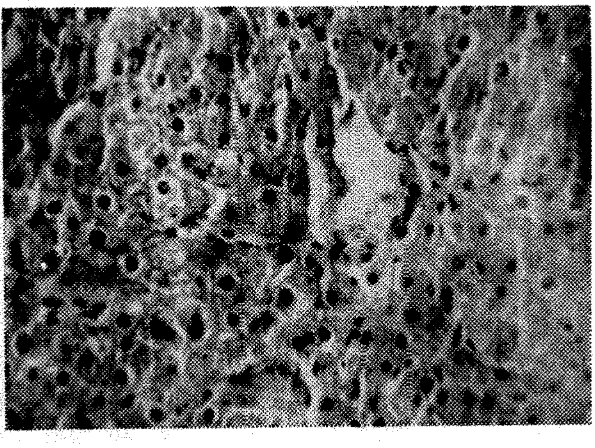

FIG. II Fatty infiltration. 2. Cytoplasmic vacuolization. 3. Karyolysis and Karyopyknpsis of nuclei.

The fatty changes are due to the increase in the metabolic demands of the hyperthyroid state (Movitt, *et al* 1955). Another interpretation is that hyperthyroidism induces a relative nutritional deficiency by increasing the demands for essential dietary constituents. The changes are probably due to the combined effects of the in direct deleterious effects of the thyroid hormone and infection, anoxia, toxins, congestive heart failure and nutritional deficiencies (Dooner, *et al* 1967).

No satisfactory explanation can be given for the hepatic lesions of non-specific reactive hepatitis with lymphocytic infiltration. This was found in 75% of our patients. In support of our study similar inflammatory changes as evidenced by round cell infiltration was reported in 2/3rd of the patients studied by *Cemeron, et al* in 1935.

Increased hepatic metabolism however, is reflected in increased hepatic oxygen consumption. As hepatic blood flow is normal, liver cells must extract more oxygen from the blood flowing past them. This means that the centrizonal areas which receive their blood supply last suffer from a diminished oxygen supply and this might contribute to the centrizonal necrosis (*Sheila Sherlock* 1963).

Glycogen depletion is caused by thyroxine due to increased utilization of glucose resulting in increased glycogen mobilization from the liver. If the diet is inadequate in carbohydrates and proteins, more glycogen depletion is seen (*Klion, et al* 1971). Glycogen depletion was present in 50% of cases in the present study. Movitt, *et al* 1955 reported glycogen depletion in the majority of cases in his study, but Piper *et al* (1947) found this change to be inconstant.

Fibroblastic proliferation was attributed to the increased velocity of blood-flow with resulting capillary congestion; capillary sclerosis and eventual fibrosis in the portal area (*Moschcowitz* 1946).

Cytoplasmic clarification and vacuolization in liver cells were noted in 25% and 16% respectively in the present study. Dooner *et al* (1967) also reported these changes as a striking feature in their study. They also found karyolysis and karyopiknosis in 6 patients. The present study showed its presence in 25% of cases.

Our study shows that there was no correlation between the histopathological changes and biochemical liver function tests. Though biochemical tests were normal in the case of the majority of the patients, histopathological abnormalities were present.

Summary.—Twelve patients with uncomplicated thyrotoxicosis were studied with particular reference to liver changes; it was found that biochemical liver functions including BSP test were not altered. Two patients showed arise in gammaglobulin and three showed a mild rise in the serum alkaline phosphatase. But almost all cases showed histopathological abnormalities as round cell infiltration (9 patients), glycogen depletion (7 patients) fatty infiltration (3 patients) and fibroblastic proliferation (5 patients). There was no co-relation between histopathologic changes and biochemical liver functions.

Acknowledgement.—We thank the Superintendent, Osmania General Hospital Hyderabad for according permission to publish this paper utilizing hospital records.

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EVALUATION AND TREATMENT OF ANKLE SPRAINS

As previously noted, standard X-rays of the ankle seldom provide information concerning the severity of ligamentous ankle injuries. Stress films in inversion or eversion are of little use unless performed under adequate anesthesia. A talar tilt of greater than 10 with eversion is pathologic. With inversion stress, less than 5 is normal, 5 to 25 may be normal or abnormal, and greater than 25 is abnormal. Ankle arthrography has been shown to provide the most accurate information concerning both the site and severity of ligamentous injuries about the ankle and correlates well with findings noted at surgery. The procedure is technically not difficult, has virtually no morbidity or complications, and is relatively easy to interpret, but is time consuming and probably not worth-while unless surgery is contemplated or the diagnosis is in question.

The clinical examination, when performed carefully, allows one to accurately localize involved ligaments, this portion of the evaluation is commonly overlooked or performed in a cursory manner.

Treatment of inversion sprains: These injuries can be treated by early mobilization (ice wrap, elevation, crutches, with weight bearing allowed as pain subsides), or by cast x 3 weeks). Surgical repair should probably only be considered in young athletes, and late repair gives results equal to immediate repair.

Treatment of external rotation sprains: Same as above. Surgery is never required for this ligamentous injury.

Treatment of eversion sprains: Partial tears can be treated as above. Complete tears (extremly uncommon) can be treated with either surgical repair or long leg casting with the ankle in eversion.

Prognosis:—The incidence of long term problems with instability, giving-way and pain depend significantly on the age and activity levels of the patient. In one series, 60 per cent of college age patients complained of functional instability and/or pain with strenuous activity after treatment with casting or early mobilization. In the light of the satisfactory results obtained in late surgical repair, the more conservative initial treatment of early mobilization or casting should be used for most patients. Active exercises to strengthen muscle groups around the ankle has also been shown to favourably influence recovery and the long term prognosis of ankle sprains. This may be of particular value in younger, active patients treated conservatively.—(*The West Virginia Medical Journal*, August, 1975).

A PROSPECTIVE STUDY OF ACUTE RHEUMATIC FEVER IN CHILDREN AND EVALUATION OF *MICROPYRIN-C**

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INTRODUCTION :—Rheumatic fever and its sequelæ remain a problem in many countries at all levels of economic development, though the severity of rheumatic fever and the frequency of recurrences have both diminished [1]. The decrease in the number of cases with debilitating carditis cannot be attributed wholly to changes in the natural course of the disease but also to the introduction of prophylactic measures for the prevention of streptococcal infections and recurrences in known rheumatic subjects. It is currently believed that activity of the disease rarely lasts longer than six months and that recurrence is the chief cause of progressive disease [1]. Hence prevention of both the primary attack and recurrences is very essential, though the former is more difficult because of the problems in recognising it as also the assurance of adequate therapy. The pattern of the disease may have undergone some changes in diferent geographical regions and the sensitivity and specificity of the criteria at present used are not known. In recent years widely conflicting views have been expressed regarding the nature of acute rheumatic fever in children in India and its neighbouring countries and observations from different parts of India vary widely. A prospective study was carried out to determine the clinical profile of acute rheumatic fever, to assess the effect of anti-inflammatory treatment with *Micropyrin-C* tablets (350 mg. microfined aspirin and 25 mg. Vitamin-C in each tablet) and to follow-up these cases.

Material and Methods :—50 patients with acute rheumatic fever admited in the Institute of Child Health and Hospital for Children, Madras, between January 1973 and March 1974, are included in this prospective study. The selection of cases was based on the modified Jones criteria laid down by the American Heart Association [4]. A detailed history was taken and a thorough clinical examination was made on all the admitted cases. 37 children suffering from acute rheumatic fever with arthritis and or mild rheumatic carditis were started on microfined aspirin (*Micropyrin-C*) in a dose of 100 mg per kg. of body-weight, administered post-prandially in equal divided doses together with parenteral penicillin and other supportive measures. Anti-inflammatory treatment was administered for a period of 4 to 6 weeks for arthritis cases and 6 to 8 weeks for carditis patients. For these patients, serial ESR and C-reactive protein estimations were made and also skiagrams were taken of the chest; electrocardiogram and skiagram of the joints were taken when necessary.

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*Specially contributed to the 'ANTISEPTIC'.

Clinical examination of joints included observation for intensity of pain, swelling, redness, warmth and tenderness. The diagnosis of carditis was made on the basis of the presence of significant heart murmur, cardiomegaly, cardiac decompensation or pericarditis with or without effusion. In all doubtful cases investigations were made routinely to rule out other collagen diseases like rheumatoid arthritis and systemic lupus erythematosus. 25 patients were followed up for a varying period of 6 to 15 months, 6 were followed-up for more than one year, 11 for 9 to 12 months and 8 patients for 6 to 9 months. These children were given prophylactic parenteral long-acting penicillin and examined at regular intervals for the development of new murmur, progression of illness, rebounds or recurrences.

Almost one third of the patients selected by us did not come for follow-up even with repeated instructions by the medical officer and the social worker and home visits and so were dropped out from the study.

Observations.—Acute rheumatic fever formed 0·23% of the total of 26,415 admissions during the period of 15 months (60 patients). The patients studied in this Institute were up to the age of 12 years. There was no incidence below 5 years. The majority of the children (60%) were in the age-group of 8 to 10 years. Four had their first attack at the age of 5 years. Of these 60 patients, 32 were boys (53%) and 28 were girls (47%). In 47 of them the attack occurred for the first time, for the second time in 7, and 6 had more than five attacks. The maximum number of attacks in one patient in this series was 11. The majority of the patients belonged to the lower socioeconomic group, 63% coming from families with a total monthly income of Rs. 100 to 200 and 27% from families with a monthly income of less than Rs. 100. In one of the patients a positive family history of rheumatic fever or rheumatic heart disease was obtained.

The presenting complaint in patients with arthritis was painful swelling of the joints with moderate limitation of movements in 64% of them and pain in the joints without any obvious swelling or tenderness in 5%. The presenting features of carditis (23%) patients were breathlessness and palpitation. Four had abdominal pain and 2 patients had epistaxis in addition to the arthritis.

Arthritis was isolated in 49% of the patients and associated with carditis in 15%. Carditis occurred alone in 23% of the patients and was associated with arthralgia in 5%. The total incidence of carditis in this series was 43%. There were 5 patients with chorea (8%) 3 in boys and 2 in girls and these had no associated features like carditis or arthritis and there was no previous history of rheumatic fever. Two children had subcutaneous nodules, one associated with severe arthritis and the other with carditis. None of the cases had erythema marginatum.

In the present study, the knee joints were involved in 23%, ankle joints in 5% and both knees and ankle joints in 27%. Joints other than knee and ankle were involved in 10% of the patients. The incidence of cardiomegaly was 25%, congestive cardiac failure 25% and pericarditis 1 6%. All carditis patients had significant pan-systolic or mid-diastolic murmur. Thirty-seven patients were selected for receiving microfined aspirin (Micropyrin-C) and were followed up. Of these, 25 had arthritis, 3 had carditis with arthralgia and 6 children had mild carditis with arthritis. Only 25 out of these 37 children could be followed-up. In none of them rebounds were observed after stopping the anti-inflammatory treatment and all the children tolerated microfined aspirin (Micropyrin-C) well, without any major side-effects. Three had nausea and vomiting which improved subsequently with a reduced dose and 2 had increased sweating which subsided spontaneously.

In 2 patients, one with arthritis alone and another with arthritis and carditis, aspirin was not effective and both these patients were given steroids with which the latter improved, but the former had recurrences. No patient with isolated arthritis subsequently developed signs of cardiac involvement during the follow-up period of 6 to 15 months. Two patients (8%) one with isolated arthritis and the other with arthritis, carditis and subcutaneous nodules had a recurrences after 11 and 7 months respectively. The former was admitted for acute nephritis 3 months after the first attack of rheumatic fever and 8 months after recovery, had a recurrence of rheumatic fever. In all the others good subjective and objective improvements were noted. The joint pain and tenderness subsided within 2 to 3 days in arthritic patients. Patients with carditis were symptom-free and comfortable by the end of one week.

Serial erythrocyte sedimentation rate and C-reactive protein estimations carried out simultaneously, (at the beginning, middle and end of the anti-inflammatory treatment) indicated that the E.S.R. came back to normal earlier than C reactive protein in 80% of the patients. The E.S.R. at one hour ranged from 18 mm. to 195 mm. and with treatment ranged from 1 to 22 mm. in 4 to 6 weeks. In these patients, the C-reactive protein continued to be positive except in 3 patients, though there was no other clinical evidence of persistent activity of the disease. Electrocardiograms of these patients showed a prolonged P.R. interval above the average, in 43% and also prolonged QTc interval in 57% of the patients. There were no other significant

findings in the E.C.Gs. of these patients. All patients in this study had mild normocytic normochromic anæmia except one patient who had associated severe iron deficiency anæmia requiring blood transfusion and iron therapy. The hæmoglobin was in the range of 8 to 10 gm% in the acute stage and improved without specific treatment, as the inflammatory process subsided.

Discussion **:—The need for determining specific and sensitive criteria for diagnosing acute rheumatic fever arises because of the varying incidences of the different manifestations of the disease; this is so not only in our country but also in several other countries of the world according to published reports.**

In the present study, 60 patients with acute rheumatic fever were documented over a period of 15 months whereas Padmavati[3] in New Delhi reported an incidence of only 38 patients with acute rheumatic fever among children over a period of four years.

The comparative incidence of carditis in the present study or and in the studies reported from other countries is given in (*see* Table I, *below*). It will be seen that the incidence of (43%) carditis in our study is considerably less.

In India, Roy[4] has reported 46% carditis and Vaishnava[5] documented 90% cardiac involvement. Shymal, Sangal, *et al*[6]. in a study of 102 children with first attacks of rheumatic fever observed 33 3% carditis and stressed that there is a significant difference in the incidence of carditis in those with first attacks as compared to those who had recurrent attacks. The findings in the present study given below do not [reveal such significant difference.

TABLE I

Showing the Comparative incidence of Carditis

Location	Total No. of rheumatic fever patients	Percentage with carditis	Year of study
Shiraz, Iran	70	64%	1957–67
Jamaica	100	72%	1952–60
Puerto Rico	101	68%	1962—64
Ireland	160	78%	1957–66
Egypt	1000	80%	1965
Pakistan	59	75%	1984–69
Our series in India	60	43%	1973–74

TABLE II

Clinical manifestations	% out of Total no. of patients (60)	% out of those who had first attacks
Arthritis	49%	53%
Carditis	23%	23%
Both arthritis and carditis	20%	13%
Chorea	8%	11%
Subcutaneous nodules	3%	3%
Erythema marginatum	—	—

Note : Modified from '*Rheumatic Fever*' by Markowitz and Gordis[1]

There has been a striking decline in the frequency of chorea in comparison to arthritis and carditis[1]; 52% incidence was reported during 1920-30 by Bland and Jones, 43% during 1921 and

1925 and 15% during 1956-1960 among those admitted to the House of the Good Samaritan in Boston. The incidence of chorea in this series was 8% and correlates with that in the report of Roy[4] from New Delhi.

The prognosis of patients with chorea and rheumatic fever does not differ from that of patients with rheumatic fever alone. According to Aron *et al*, rheumatic valvular disease was found in 27% of their patients, 30 years after an attack of pure chorea even in the absence of recognizable rheumatic recurrences.[1] So these patients should have the benefit of long-term anti-streptococcal prophylaxis and should be watched for the development of any cardiac lesion.

There was no occurrence of isolated subcutaneous nodules or erythema marginatum though both have been classified as the major criteria. However, subcutaneous nodules were seen in 2 patients, one associated with arthritis and the other with both arthritis and carditis. Roy[4] has suggested that a syndrome of joint pain, increased erythrocyte sedimentation rate and high anti-streptolysin 0-titre should be regarded as major criteria in India for the diagnosis of acute rheumatic fever[7], because of the very high (90%) incidence of arthralgia in his series with a relatively smaller incidence (32%) of arthritis. But in the present study, the incidence of arthralgia alone or in association with carditis was much less. This incidence may not be reliable because cases of arthralgia may not have come under our observation and may have passed uninvestigated.

Two (8%) patients one with arthritis and one with arthritis and carditis and subcutaneous nodules had recurrences among the 25 who were followed up in this study within one year. One of them had an attack of acute nephritis in between the two attacks of rheumatic fever. Both these patients did not come regularly for antibiotic prophylaxis after the initial treatment was over. The recurrence rate is highest during the first 3 years following an initial attack. Recurrences were more common when the initial attack strikes early in life and when this attack includes carditis especially with cardiac enlargement[1]. Roll *et al* reported that 73 per cent of the 488 patients with their first rheumatic episodes, had a recurrence within 3 years prior to the introduction of preventive measures. The follow-up period in this study was only 6 to 15 months and is not quite adequate for an accurate estimation of the recurrence rate.

Microfined aspirin ('*Micropyrin C*') was found to be effective in reducing the inflammatory changes in patients with arthritis and mild carditis. There were no major side-effects and no rebounds.

The low mortality in the acute stage and the increased morbidity and mortality in the chronic stages due to rheumatic heart disease and its complications and the fact that recurrences are one of the predisposing factors to cardiac involvement indicate the need for administering regular anti-streptococcal prophylaxis for such patients. There was nearly a third of the number, who dropped out in this series during the follow-up period even with specific instructions and house visits. The majority of the drop-outs were patients with arthritis who did not have the initiative to continue treatment once the joint pain and tenderness had subsided.

Primary and secondary prevention are essential to reduce the incidence of rheumatic fever and rheumatic heart disease. Primary prevention includes prompt detection and adequate treatment of streptococcal infections and a well-organised continuous programme of case-finding. However case-identification is of little value without proper follow up, for diagnosis and treatment. Secondary prevention denotes prevention of recurrences in these patients with continuous long-term antimicrobial prophylaxis, at the same time taking care to re-evaluate the "Rheumatic Suspects" periodically.[1] There is an increased need for creating an awareness in the patients and their parents for continuing this prophylactic treatment considering the high incidence of drop-outs inspite of specific advice.

The W. H. O. is organising a world-wide programme to modify the criteria, to standardize the diagnostic aids and to reduce the incidence of rheumatic fever and rheumatic heart diseases which cause physical limitation, disability, eventual incapacitation and early death.

Summary.—A prospective study of 60 children suffering from acute rheumatic fever over a period of 15 months was made to determine the clinical profile and compared with other reports. 37 children with acute rheumatic fever with arthritis and/or mild carditis were put on microfined aspirin ('Micropyrin-C') and 25 were followed up 6 to 15 months. Out of 25 patients 23 had got good subjective and objective improvement with Micropyrin-C. None of these patients had rebounds after the stoppage of the anti-inflammatory treatment with Micropyrin-C. The patients tolerated microfined aspirin ('Micropyrin-C') well without any major side-effects and patients with mild carditis showed good improvement.

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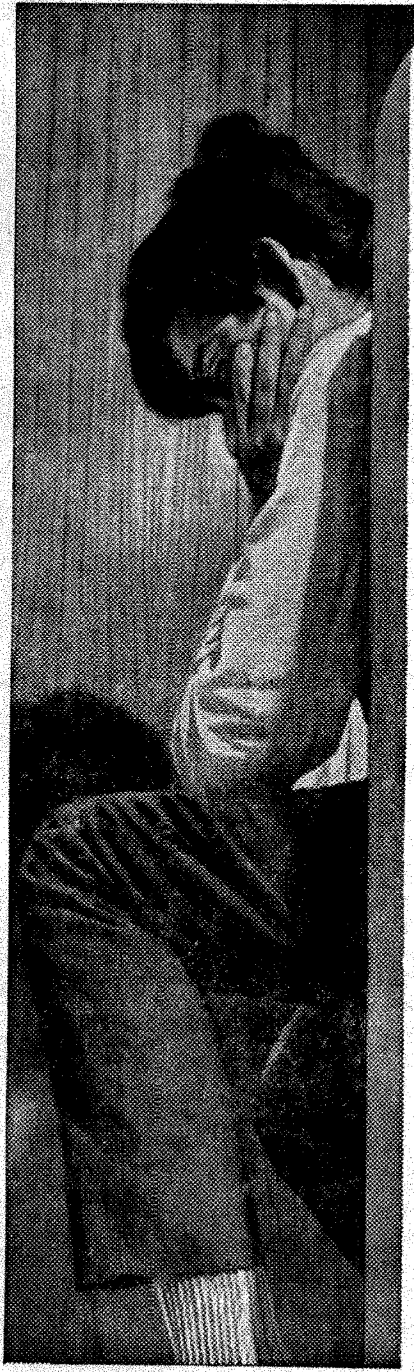

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INCIDENCE OF AMŒBIASIS AND GIARDIASIS IN CHILDREN (0—12 YEARS) AND THE EFFECT OF *METRONIDAZOLE* SYRUP—A THERAPEUTIC TRIAL*

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INTRODUCTION :—Amoebiasis and giardiasis are diseases, global in their distribution, though more prevalent in the tropics and temperate zones (1, 3, 4, 7). Both diseases usually produce gastrointestinal disease, the commonest manifestations being diarrhoea and/or dysentery(1, 3, 4, 7). In India, the incidence of amoebiasis varies from 5% to 48% (10) and that of giardiasis is 17% to 28·7%[11]. About 25% to 35% of the population may harbour the parasite and remain symptomless (1, 3, 10, 11).

Amoebiasis and giardiasis are caused by the protozoa *Entamoeba histolytica* and *Giardia lamblia* respectively. Both produce gastrointestinal disease, the presence of symptoms being very variable. Amoebiasis, however, covers an extensive range of disease and also has visceral manifestations.

Giardia lamblia, formerly considered to be innocuous, has been found to interfere with fat absorption, leading to Malabsorption syndrome (1, 3, 7, 8, 9, 10, 20). Both diseases are commoner in the poorer classes (1, 3, 4, 10, 11). Though giardiasis affects children more commonly and amœbiasis is seen more often in adults, no age is immune (4, 10, 11, 12, 15). Outbreaks of giardiasis have been seen in adults (10, 11). and abundant evidence reveals that amœbic infection can occur in young children, even so early as the neonatal period (3, 4, 10).

Malnutrition, differences in the dominant types of the intestinal flora and other factors may have a bearing on pathogenicity (1, 3, 4, 7, 10, 11, 12). Affluent societies in cool temperate climates are often asymptomatic or mildly symptomatic, while in poorer classes in warm climates, the disease may be devastating, considerably contributing to increased morbidity and mortality(4, 10, 11, 12, 15, 16).

Material and Methods.—200 children aged 0–12 years, belonging to the middle and upper class strata of society attending the paediatric clinic, were assessed. A random selection

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*Specially contributed to the 'ANTISEPTIC'.

(every alternate child seen is a private clinic in Madras City, India) irrespective of their complaints was made. They were submitted to a thorough physical examination and a routine examination of naturally evacuated stools. A detailed history was also obtained.

The symptomatology and clinical findings (discussed later) and all children were assessed for signs and symptoms particularly relevant to amœbiasis and giardiasis (using a specific *pro forma*), besides an overall examination.

The stools were examined macroscopically for colour, consistency, smell and the presence of mucus and/or blood. The *p*H was also noted. Microscopic examination was made for ova, cysts, the nature of the cellular exudate, the presence of Charcot Leyden crystals, for all patients. When the vegetative forms or cysts of *Entamoeba histolytica* and/or *Giardia lamblia* were seen, the number in five independent fields under high power magnification was counted and recorded. When it was doubtful if an organism was *Entamoeba histolytica,* iodine staining was made. Microscopic stool examination not showing any abnormality was repeated by the saline concentration method before being declared negative.

Treatment with Metronidazole syrup (*Aristogyl**) containing 40 mg. of Metronidazole in 5 ml. in an orange flavoured syrup base, was given to all children showing *Entamoeba histolytica* and/or *Giardia lamblia* in the stools. Patients were divided into 3 categories of personality types to assess drug acceptability :—*Type A* :—Children who take any drug without difficulty, *Type B* :—Children who take any drug with some difficulty, *Type C* :—Children who take any drug with great difficulty.

The dosage schedule was as follows, being calculated for expected weight for age, amounting to approximately 10 to 11 mg/Kg body weight per day in three divided doses. Children with little or no symptoms were given a 5 day-course, while those with moderate to severe symptoms had a 10 day course :—

0–2 years : 1 teaspoon thrice daily (*Course A*) 120 mg daily.

3–8 years : 2 teaspoons thrice daily (*Course B*) 240 mg daily.

9–12 years : 3 teaspoons thrice daily (*Course C*) 360 mg daily.

All the children were followed up with a stool examination, on the last day of their treatment course, one month later and again three months later. Children showing recurrence or reinfection on follow-up, were given a second course of the syrup and in one case a third course. No adjuvant therapy known to act on *Giardia lamblia* or *Entamoeba histolytica* was given to any of these children.

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*Aristogyl—Mfd. by Aristo Pharmaceuticals (Pvt.) Ltd., Bombay

Discussion.—30 (15%) of the 200 children studied had *Entamoeba histolytica* and/or *Giardia lamblia* in their stools. 50% of the infested children had amœbiasis, and 70% had giardiasis. The overlapping figure is accounted for by the fact that some (20%) had both amœbiasis and giardiasis. Infection rates for both diseases were least below the age of 2 years, highest in the 4 to 8 years age-group, showing a decline among the 9 to 12 years age-group, with a higher preponderance in boys than in girls in all ages. These statistics are tabulated *below* (I, II, and III).

TABLE I

Showing the nature of the infestation

Nature of infestation	Incidence in all children studied *i.e.*, 200	Incidence in affected children *i.e.*, 30
Amoebiasis	7·5%	50%
Giardiasis	10·5%	70%

TABLE II

Age and sex incidence of *Giardiasis* among the 30 affected children

Age in yrs.	Sex	No. of children with giardiasis alone	No. of children with giardiasis and amœbiasis	Total No. of children with giardiasis
0—2	Male	2	—	2
	Female	2	—	2
4—8	Male	6	2	8
	Female	3	3	6
9—12	Male	2	—	2
	Female	—	1	1
	Total	15	6	21

TABLE III

Showing the age and sex incidence of *Amoebiasis* among the 30 affected children

Age in yrs.	Sex	No. of children with amœbiasis alone	No of children with amœbiasis and giardiasis	Total No. of children with amoebiasis]
0-2	Male	1	—	1
	Female	—	—	—
3-8	Male	2	2	4
	Female	1	3	4
9-12	Male	3	—	3
	Female	2	1	3
	Total	9	6	15

Of the infected children, 21 (17%) had symptoms pertaining to the gastro-intestinal tract on specific enquiry. An interesting symptom seen in the infected children was an exaggrated gastro-colic reflex, *i.e.* an urgent desire to defaecate after taking food, 18 (60%) of the 30 children having this symptom. This symptom may perhaps serve as a useful pointer to the presence of amœbiasis and/or giardiasis especially in the absence of more specific symptoms.

TABLE IV

Showing the presenting complaints in the 200 children

	Presenting complaint	No. of children
1	Routine check-up	49
2	Fever + fits, cough, etc.	50
3	Small for age and not growing well	21
4	Delayed milestones	7
5	Complaints pertaining to the gastro-intestinal tract	33
6	Urticaria	4
7	Jaundice	2
8	Miscellaneous *e.g.* injury, joint pains, chest pain, wheezing, etc.	34
	Total ...	200

All infected children were treated with Metronidazole syrup, on already stated. The drug was well accepted by all three personality types of children and 28 (93·3%) of the 30 infected children showed the absence of *Entamoeba histolytica* and/or *Giardia lamblia* in the motion on completion of the treatment course. Of the 2 children showing persistence of infection, one child had nausea and vomiting leading to discontinuation of the drug, while the other was given the drug in inadequate dosage (1 teaspoon three times daily instead of 3 teaspoons thrice daily). Both children, however, responded satisfactorily when the treatment was repeated in appropriate dosage.

On the routine one month follow-up, 9 (30%) children showed a recurrence or perhaps re-infection on motion examination, 3 of them having acute diarrhoeal symptoms. A second course of treatment was given and the motion re-examined after completion, when all the 9 children showed negative stools. Motion examinations, 3 months after the first treatment course were negative in all except one child, who incidentally was one of the 9 showing recurrence in the one month follow-up. He was given a third course of treatment, following which the motion was negative.

Five of the 9 children who showed recurrence of re-infection had amoebiasis, 2 had giardiasis and 2 had both amœbiasis and giardiasis in both motion examinations. The child showing a positive stool after 3 months had amoebiasis on all motion examinations, but responded to a 10 days treatment course after the last positive motion examination.

Conclusion.—The incidence of amœbiasis and giardiasis in a random selection of 200 upper and middle class children studied in a private clinic in Madras city, 7·5% and 10·5% respectively, the total number of infected children being 30 (15% of the 200 children studied). Treatment with Metronidazole in syrup form containing 40 mg in 5 ml. in a dosage of 10 to 11 mg kg. of body weight was very effective, all the infected children responding both symptomatically and showing negative stools on this schedule. It is therefore, concluded that a low dosage schedule of 10 to 11 mgm/kg of body weight is adequate to treat-intestinal amœbiasis and/or giardiasis in children, the generally recommended higher dosage of 14 to 30 mg/kg body weight (5) not being necessary.

Summary:—In a random selection of 200 upper and middle class children, attending a paediatric clinic, 15% were found to have Amoebiasis and/or Giardiasis on routine stools examination. The affected children were treated with a low dosage schedule of Metronidazole syrup with satisfactory results. The results indicate that in children with intestinal amoebiasis and/or giardiasis, the high dosage of Metronidazole generally recommended, with its possible side-effects, is unnecessary and can be satisfactorily replaced by a lower dosage, as a syrup, without any adjuvant therapy.

Acknowledgement —We offer our grateful thanks to Messrs Aristo Pharmaceuticals Private Limited, Bombay, India, for providing us with an adequate supply of 'Aristogyl' syrup used in this trial.

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TOBACCO AND DRUG USE

When 227 high school students in Bern were asked about their smoking habits, 23% of those who smoked and only 3% of those who did not admitted that they were also taking drugs regularly, the most common drug being hashish. In general 61% of those who smoked and 36% of those who did not had tried illicit drugs at least once. Two thirds of all juveniles., an equal number of smokers and non-smokers, considered that use of narcotics should be forbidden. However, they made an exception concerning hashish; 67% of the smokers and 52% of non-smokers considered that hashish should be legalized.—(*J. A. M. A.*, July 28, 1975).

HEALTH HAZARDS OF SMOKING*

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SINCE the turn of the century, the practice of smoking has been rapidly increasing throughout the world, and scientists have been showing great interest in the effects of tobacco on human health. Plenty of information has accumulated as a result of the numerous studies, animal experiments and clinical and autopsy studies. An interrelationship has been observed between the use of tobacco and some diseases :—

1. **Lung cancer.**—Early in this century, a connection between smoking and lung cancer was suspected from a clinical observation that lung cancer patients were also heavy smokers. The first study was made by Muller in 1939, who analysed the autopsy records in Cologne for the period 1918—37[11]. The Surgeon General's Advisory Committee on smoking and Health' in the U. S. A., constituted in 1962 to make an objective assessment of health hazards of the constant use of tobacco critically reviewed 29 retrospective and 7 prospective studies. A strong causal association was observed between smoking and lung cancer. Proportionately more cigarette smokers were found among the lung cancer patients than in the control group who did not suffer from disease. The incidence increased with the increase in the amount of smoking, its duration and the extent of smoke inhalation being stronger in cigarette smokers, who inhaled the smoke, than in the pipe and cigar smokers, who generally do not inhale the smoke. The death rate from lung cancer was, on an average, ten times higher for smokers than for non-smokers. The mortality-ratio increased progressively with the amount and duration of smoking and degree and depth of inhalation of the smoke. It was higher in those who started to smoke before the age of 20 than in those who started after 21[16].

In extensive and controlled blind studies of the tracheobronchial tree of 402 male patients, Auerbach *et al* observed that the following histopathologic changes of the epithelium were very common in smokers with or without lung cancer, their frequency and intensity increasing with the duration and amount of exposure, being highest in patients dying of lung cancer and extremely rare in non-smokers[1]; (*i*) Loss of cilia; (*ii*) hyperplasia of the basal cells (more than two layers) and also of the bronchial glands; (*iii*) presence of atypical cells with hyperchromatic nuclei and in a disorderly arrangement.

The changes were similar to those seen in dogs subjected to protracted exposure to tobacco smoke or its condensed tarry distillate (painted) on the bronchial epithelium.[14] Auerbach was able to induce lung cancer in dogs made to smoke nine cigarettes a day each (roughly equivalent to 40 cigarettes daily for a man of average size) for two years through a tracheotomy tube. The animals also developed habituation and craving for cigarettes soon. The above mentioned classic histopathologic changes seen in human smokers invariably preceded the induction of cancer in these dogs[17] and should be regarded as pre-malignant.

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* Specially contributed to the 'ANTISEPTIC'.

The carcinogenicity of tobacco smoke and its condensate has been shown to be on account of seven polycyclic aromatic hydrocarbons, which are formed as a result of pyrolitic reactions which some of the tobacco constituents undergo at the high temperature (835° to 884°C) attained in the burning zone of the cigarette. The most potent of these carcinogenic hydrocarbons, and which is present in much larger quantities than any of the others, is benzo (a) pyrene.[9] Substances like phenols, fatty acids and their esters present in the smoke, though not carcinogenic themselves, enhance the potency of these hydrocarbons several times, or lower the threshold to them.[19] Depression of ciliary motility following exposure to tobacco smoke, and anatomic damage to ciliated epithelium in the long run results in slowing the stream of mucus[2,3,4,] which is the normal mechanism for the expulsion of the inhaled foreign particles, (including carcinogens), free or phagocytosed. The phagocytic clearance mechanism too may be overwhelmed, at last. Thus smoking provides carcinogens as well as conditions favourable for them to act.

The predominent type of lung cancer in smokers and in experimental animals, exposed to tobacco smoke, its condensate or extracts, is the squamous cell cancer, adenocarcinoma being rare. The reverse is true in non-smokers with lung cancer.[15]

2. **Cancers at other sites.**—A significant association of oral cancer with tobacco smoking, tobacco chewing, using snuff and betel-quid chewing has been observed. Any part of the oral cavity-lips, tongue, palate, cheeks and pharynx may be involved. Mortality from oral cancer is nearly four times higher in those who use tobacco in some form or other than in those who don't use it[16].

Oral cancer appears to be more common in India than in other countries, because besides tobacco smoking, and chewing, betel-quid chewing is quite common here. Rao and Reddy noted an association between 'reverse smoking' which is common in Andhra Pradesh and resulting in cancer of the palate. This is a peculiar habit prevalent in Andhra country in which the burning end of the cigarette or cigar is held inside the mouth. In this case the carcinogenic action of tobacco is supplemented by that of heat. Excess of lip cancer in pipe smokers is also attributed to the added heat factor.[13]

Oral cancer is frequently preceded by leukoplakia, in which there is excessive proliferation of the surface epithelium with keratinization. Blockage of the stomas of the salivery glands with dilatation and squamous metaplasia of their ducts is frequently present.

Laryngeal cancer is also more common in smokers than in non-smokers. Epithelial poliferation with hyparkeratosis and squamous metaplasia precede cancer.

Association of smoking with cancer of œsophagus and cancer of the urinary bladder has also been observed.

3. *Chronic bronchitis and emphysema*:—Tobacco smoke is an important cause of chronic bronchitis and emphysema. The two conditions frequently co-exist and are characterised by excessive bronchial secretion and chronic productive cough. Airway obstruction, dyspnœa and impairment of ventilatory function (diminished forced expiratory volume) develop later. Ultimately, irreversible obstructive lung disease and cor pulmonale may supervene.

Several retrospective studies have shown that the prevalence of cough and expectoration increased with the quantity smoked and was more marked in cigarette smokers than in pipe or cigar smokers. Those who smoked cigarettes with a low nicotine content had less severe symptoms than those who smoked cigarettes with a high nicotine content. The rest of the symptoms showed a less clear relation to the amount. smoked. A six-fold mortality from chronic bronchitis and emphysema in smokers as compared with non-smokers has been observed.[16] But more important than the mortality is the gross chronic physical disability which the disease causes during life

Tobacco smoke is a heterogeneous mixture of some five hundred different compounds in particulate and gaseous forms. The smoke, as it enters the mouth, is a concentrated aerosol, containing, billions of liquid particles, with a median size of 0·5 micron, in each cubic centimetre. These get into all parts of the respiratory tract. By far the most important component of tobacco and tobacco smoke is nicotine, whose pharmacologic action on the central nervous system and the sensory experience derived therefrom, perpetuate the tobacco habit. It stimulates the bronchial glands to produce excessive amounts of mucus. It reduces appetite and produces certain cardiovascular effects from stimulation of the autonomic nervous system.

Nature has furnished the respiratory tract with a normal cleansing mechanism whereby it tends to get rid of noxious materials inhaled and deposited in it. In the upper air-ways, such materials get dissolved or impacted in the mucus supplied by the bronchial glands and the goblet cells, and are expelled with it by the constant and rhythmic movements of the cilia on the lining epithelium. In the lower airways, *i. e.* alveoli and acini, a part of the inhaled matter is dissolved in the body fluids and removed through absorption into the blood stream or lymphatics. Other deposits are ingested by phagocytes and are transported proximally to the ciliated air-passages to be expelled with mucus. Some of these phagocytes enter the interstitial tissues and become sequestered or are removed to the regional lymph glands[16].

Tobacco smoke produces significant functional and anatomic alterations in the airways. Some of its gaseous contents, like hydrogen cyanide, formaldehyde, acetaldehyde, acrolein and ammonia, have been shown to depress the ciliary activity[2,4]. The phagocytic clearance mechanism in the lower airways may decompensate under the stress of protracted heavy smoking. Autopsies on smokers have shown a decrease in the number of ciliated cells, shortening of the remaining cilia, hypertrophy and hyperplasia of the mucous glands and increase in the goblet[1,3]. Excessive mucus production with impaired cleansing mechanism, may increase the susceptibility of the tracheobronchial tree to secondary infection[7].

Similar histopathologic changes are seen in chronic bronchitics, smokers as well as non-smokers[18]. Conceivably one or more components of the tobacco smoke have the property of producing these changes in a manner similar to that of other unknown factors operative in the pathogenesis of chronic bronchitis[16].

4. *Coronary artery disease* :—From numerous epidemiological studies, it has been established that more smokers die from coronary disease than non-smokers, but it is not clear that the association has causal significance. Smoking and nicotine administration cause acute cardiovascular effect from a stimulation of the autonomic nervous sytem *e. g.*, transient hyperpnœa, a rise in blood-pressure and heart rate and peripheral vasoconstriction, but these effects do not adquately account for the observed association between smoking and coronary disease[16].

Besides smoking, other factors such as high blood pressure, high serum cholesterol and obesity, are also known to be associated with an unusually high death rate from coronary disease. The causative role of these two, though strongly suspected, is not yet proven. In the present state of our knowledge, coronary heart disease has a multifactorial ætiology, and smoking seems to be an important factor. Till such time as a causal association between smoking and coronary artery disease is established, it would be prudent to discourage smoking as a preventive measure against the disease.

5. *Miscellaneous*:—Epidemiological studies indicate an association between cigarette smoking and peptic ulcer, which is greater for gastric ulcer than for duodenal ulcer. Dorn reported a mortality-ratio of 5 : 1 for gastric ulcer in smokers as compared to nonsmokers [6].

Tobacco amblyopia, a condition characterised by dimness of vision unexplained by organic disease, and with a specific type of centrococcal scotoma has been associated with tobacco use, especially pipe and cigar smoking. The association, however, has not been substantiated by experimental and epidemiological studies.

Buerger's disease has been traditionally associated with smoking. The literature contains numerous clinical reports describing the arrest of the disease when smoking is given up, and its reactivation on resumption of smoking.

Accidents from fire in the home and the farm are sometimes associated with the smoking habit especially with careless disposal of the burning stub ends of cigarettes.

Some studies have shown that women smoking during preganancy have babies of lower birth-weight than nonsmokers of the same social status.[8,10] The difference in the infant weight may be due to vasoconstriction of placental vessels, or to toxic substances like carbon monoxide in the circulation of the mother and the fœtus.

Smoking mothers are more likely to lose their babies from abortion, still-births and neonatal deaths. Evidence gathered from a study of nearly 17000 pregnancies in Britian, however, suggests that women who give up smoking by the end of the fourth month of pregnancy can usually avoid risks to their babies. The greatest damage from smoking comes during the second half of preganancy[15].

A long-term study (Second report of the British Perinatal Mortality Survey, 1969) revealed that the children of mothers who were heavy smokers during pregnancy, showed significantly decreased height, retardation of reading ability and lower ratings on "social adjustment" than the children of nonsmoking mothers.[12]

In an American study at Texas A and M University, 103 boys and girls aged 6 to 13 years were subjected to smoking environment to find out what effects smoking had on non-smokers. It was formed that in 30 minutes, a non-smoker's heart rate increased, his blood pressure went up and the amount of carbon monoxide in his blood mounted up measurably. Overall it was disclosed that the effect of the smoking environment upon the non-smoker is similar to the effect of tobacco smoke upon the smoker himself, but on a reduced scale. The obvious implication is that even if the expectant mother does not smoke, but her husband does, the unborn baby may still be somewhat harmed.[13]

Dr. Carl Schirren of Hamburg University has reported a possible connection between smoking and male infertility. He studied the fertility patterns in 5000 men, and is of the view that nicotine damages the sperms, causing severe disturbance to their motility. Cessation of smoking resulted in improvment.[15] Australian biochemist, Michael Briggs has found that in heavy smokers testosterone production is impaired as a result of carbon monoxide intake and consequent reduction in the blood oxygen level.[15]

Dr. Fort of San Francisco has advanced the theory, though on slender evidence, that smoking impairs sexual performance in two primary ways—carbon monoxide impairs hormone production and the vasoconstrictive action of the nicotine lessens erection. He cites secondary effects of heavy smoking :—lung capacity is reduced, cutting back on the stamina and on the ability to "last" during intercourse; nicotine discolours the teeth and taints the breath, reducing the smoker's sexual attractiveness. Cessation of smoking, however, improves the libido.[15]

The habitual use of tabacco is related primarily to psychological and social drives. reinforced and perpetuated by the pharmacological actions of nicotine on the central nervous system, the latter being interpreted subjectively either as stimulating or tranquillising, depending on the individual response. A certain degree of psychogenic dependence is developed. Unlike drug-addiction, discontinuation is not accompanied by a serious 'withdrawal syndrome', although difficulties attendant upon extinction of a conditioned reflex are there.[16] With a little determination and strength of will power, the habit can be shed.

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DIFFICULT TO TRACE MOTHERS WHO INGESTED D. E. S. IN PREGNANCY

In 1970 Dr A. L. Herbst and Dr. R. E. Scully reported seven cases of adenocarcinoma of the vagina in adolescent girls which appeared to be related to ingestion of diethylstilbœstrol (DES) by the mothers of these girls during their pregnancies. Since then considerable attention has been turned to this problem and it has been noted that approximately 35 to 40 per cent of female babies born to expectant mothers who are treated with diethylstilbœstrol will have certain, rather typical, pathological lesions in the lower genital tract. These lesions include a concentric ridge around the cervix giving it a "pseudopolyp" appearance and adenosis of the vagina.

In order to assess the problem of how many female babies were born to mothers who had received diethylstilbœstrol in the southern West Virginia area some years ago, a spot check the month of January, 1955 was made the records revealed there were 105 births registed in that month. Of these 105 births, 77 charts could be located on microfilm. Of these 77 charts, 33 recorded that the babies were females.

The records of these mothers were carefully checked to see if any had received stilbœstrol therapy during their antenatal course. Four mothers were found to have received stilbœstrol in the first trimester of their pregnancy because of bleeding or cramping, or some threat to the pregnancy. It was possible to locate only two of these mothers by the addresses give in the records.

On the basis of the findings I would estimate that some 10 to 15 years ago there were 40 to 50 female babies delivered here per year whose mothers recieved DES during their pregnancy. This should give a population of between 500 and 1,000 young adolescent women who are candidates for vaginal adenosis.

To retrieve the information on the four positive cases, two of whom could not be located, it would require one record room person working on no other project for two years. Obviously, this approach to the problem is not a workable one.

As an alternative approach, it is suggested that on every pelvic examination, careful attention be given to note if there is a hooded, circumcervical ridge, or any evidence of adenosis. In such cases a careful history should be obtained concerning the possibility of maternal diethylstilboestrol ingestion. These patients should then be followed more closely than usual with speculum and digital examinations. Unfortunately, Papanicolaou smears are not too valuable in demonstrating vaginal adenosis since the lesion is sub-mucosal.—(*The West Virginia Medical Journal*, August, 1975).

Cases and Comments :

CRETINISM ASSOCIATED WITH MUSCULAR HYPERTROPHY

(A Case Report)

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CASE REPORT:—This relates to a 6 year-old girl who is the 2nd child of a non-consanguinous couple from a non-endemic area of thyroid goitre. She was the product of an uncomplicated pregnancy. The neonatal period was uneventful, but the physiological jaundice persisted for nearly 2 months. There was no difficulty in breathing or feeding. Mother noticed lack of good activity in the child even after the completion of 2 months.

The child was pale and lethargic with a protuberant abdomen, an umbilical hernia and a thick protruding tongue. The mother sought medical attention for the child at the age of 6 months: some medication was given, the exact nature and dosage of which could not be ascertained.

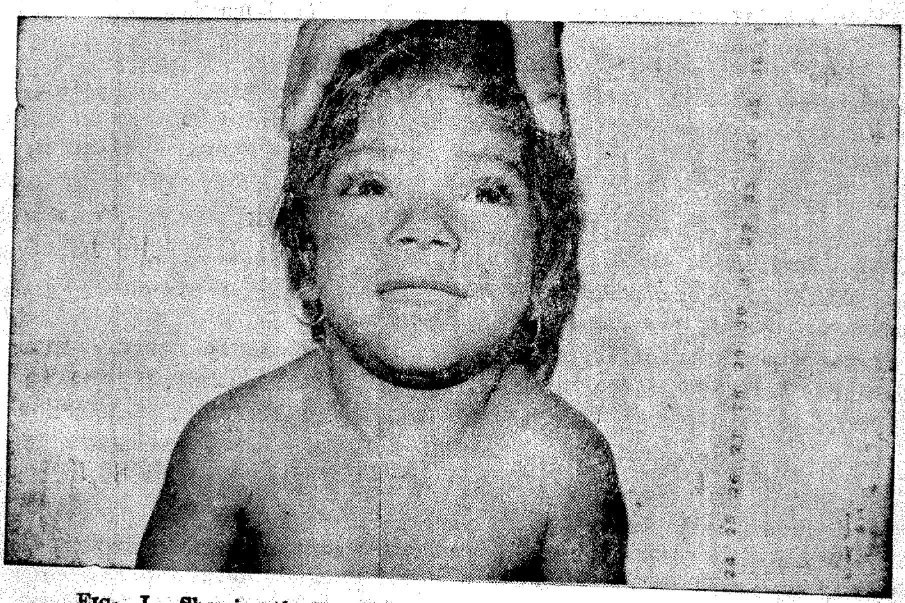

FIG. I. Showing the Typical facial features of Cretinism.

Inspite of the medical treatment, both mental and physical milestones were very much delayed. The child put on the social smile at 1 yr, developed head control at 1½ yrs, sat with support at 2 yrs, sat without support at 3 yrs. stood with support at 3½ yrs, stood without support at 5 yrs. The first tooth erupted at the age of 2 years. The child uttered its first words at the age of 3. She developed toilet training quite late. The child has also been having constipation very frequently. There was no difficulty or defect in hearing.

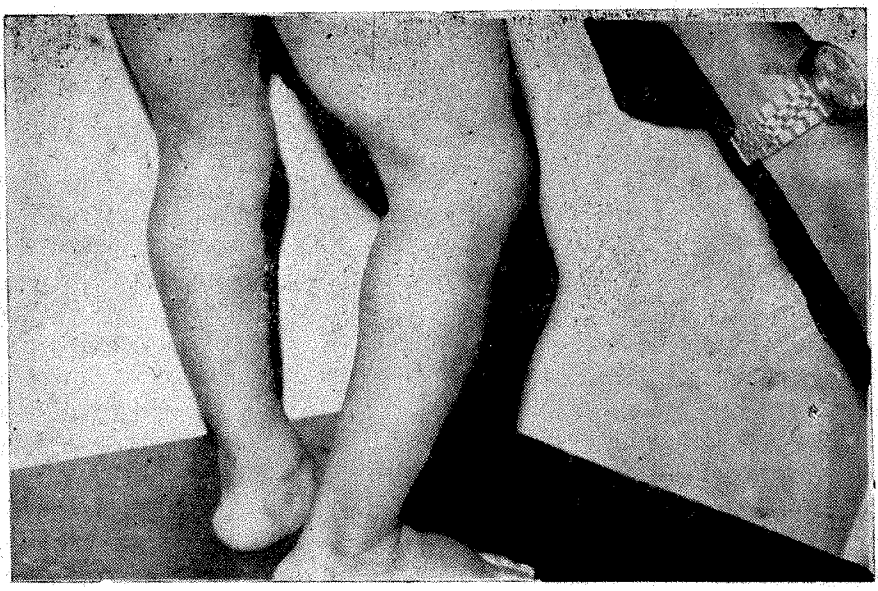

FIG. II. Showing the muscular hypertrophy of Calf muscles.

Physical examination :—The child was dull, lethargic and appeared smaller than her chronological age. She weighed 10 kg. Her height was 76 cm. Upper segment/Lower segment ratio 1·3/1. Head circumference 44 cm. The anterior fontanelle was widely open, but the posterior one was closed. The skin was pale with a tinge of yellow, cool, thick, coarse, and dry. Hair was sparse, thin, brownish and lustreless. The forehead was narrow. The nose was broad with a depressed nose bridge, increasing the intercanthal distance. The palpebral fissure was narrow, eyelids thick and puffy and the conjunctiva muddy. Mouth was open, tongue thick and protruding. There was no thyroidal swelling in the neck. The abdomen was protuberant with an umbilical hernia. Examination of the heart showed a slow, unremarkable heart. The blood pressure was 80/50 mm. of Hg. The respiratory system was normal.

Examination of the central nervous system showed that the patient was oriented and co-operative. She spoke only a few monosyllables (*amma, appa*). The voice was hoarse. There was no cranial nerve disturbance. The skeletal musculature was prominent in all extremities, more so in the calf region.

Though the muscles were firm on palpation, the tone was normal. The co-ordination and strength were good. The relaxation phase of the tendon jerks was prolonged. The planters were bilaterally flexor. There was no sensory abnormality.

The following investigations yielded the results noted below :— Total Count: 5,600 cells/cu mm. Differential Count : P58, L42, Blood Smear : Normocytic, Normochronic Anemia, Cholesterol : 206 mg%, Blood Sugar : 65 mg%, Protein Bound Iodine : 1·2 μg., SGOT : 72 units, SGPT : 34 units, creatine phosphokinase : 33·6 μ g. Phosphorus/ml/hr., (Normal range: 0·5 μg. Phosphorus. ml/hr.) Serum proteins : 6·5 g%, Skiagram of the pelvis : Epiphyseal dysgenesis.

COMMENT.—Cretinism is a rare condition, in the pædiatric age group and rarer still to find the unusual combination of muscular pypertrophy with cretinism. The reports of this complex known as the *Debre Semelaigne Syndrome* have appeared mostly in French litrature and a few cases have been reported in English literature. The pathogenesis of muscular hypertrophy in hypothyroidism has not been elucidated. There was no consistent histological change in the skeletal muscles like muscle fibre enlargement or infiltrative process. But elevated levels of serum creatine phosphokinase (CPK) have been noted in Hypothyroidism as in this case. The metabolic events leading to elevated serum levels of CPK are not fully understood. Studies elsewhere have proved that there is a considerable decrease in the apparent muscle mass following institution of thyroid therapy suggesting a causal relationship between hypothyroidism and hypertrophy of muscles. These children may possibly benefit with early supplementary thyroid medication. Hypothyroid myopathy in children is a benign condition and the response to therapy is good, provided early treatment is instituted before the deleterious effects of hopothyroidism tells upon the brain.

Summary.—Cretinism, a primary hypothyroidism, may be athyrotic or goitrous. Athyrotic variety is the one usually seen in children in our part of the country. Rarely, in addition to the typical features of cretinism, generalized muscular hypertrophy may be observed, a rare complex known as *Debre Semelaigne Syndrome*. The present report deals with the clinical study of a classical Cretin with skeletal muscular hypertrophy.

ACUTE CORONARY ARTERY DISEASE AND ORAL CONTRACEPTIVES

Eight women less than 40 years old were hospitalized because of a recent acute coronary occlusive episode. One further patient was seen with a recent acute ischemic episode as an outpatient. Of the nine women in the study, seven were taking oral contraceptives. It is probable that oral contraceptives containing estrogens should be considered as a coronary risk factor in young women.—(D. H. Friedlander, *et al Australia and New Zealand, J.A.M.A.*, 28-7-1975).

SPONTANEOUS PNEUMOTHORAX

In pneumothorax air collects between the parietal and visceral pleura causing it to become a real instead of a potential space. Sometimes there is clearly defined disease of the underlying lung such as bullous emphysema, asthma, tuberculosis, staphylococcal pneumonia (especially in children), other forms of lung abscess and cysts, occupational lung disease, sarcoidosis, or bronchial carcinoma with lung collapse; and it may also occur as a result of trauma to the chest wall. In patients known to have lung disease the possibility of a pneumothorax should be considered whenever their general condition deteriorates without an obvious reason.

In most patients, however, there is no obvious abnormality of the underlying lung, clinically or radiologically; the air simply escapes into the pleural space through the rupture of a small subpleural bleb, congenital or acquired. This is benign spontaneous pneumothorax. It tends to occur in previously fit young males, the blebs usually rupturing at the upper regions of the lung where the mechanical stresses within the lung are greatest. There are four types : simple, tension, chronic, and recurrent pneumothorax.

Tension pneumothorax is a medical emergency, in which a positive pressure builds up in the pleural space leading to marked shift of the mediastinum to the opposite side, tachypnoea hypoxaemia, and shock and hypotension due to impaired venous return to the heart. The increased pleural pressure must be reduced promptly by inserting a hollow syringe needle (16-18 B.W.G.) into the second intercostal space anteriorly. In hospital a self-retaining Malecot catheter (size 22-28) can be inserted into the same site under local anaesthesia and it is then usually connected to an underwater seal drainage.

Recurrent and chronic pneumothorax are treated by pleurodesis or parietal pleurectomy, and in chronic pneumothorax surgical resection of the fistulous communication between the lung and pleural space is usually required.

Simple pneumothorax is traditionally treated conservatively, unless complicated by severe dyspnœa, when surgical intervention is needed. Conservative treatment implies bed rest until the lung expands—a slow process probably lasting a month or more, which can result in financial hardship to a young married man with a family. A more active approach to the management of pneumothorax was advocated over a decade ago, but this is not accepted by all physicians. More rapid removal of air from the pleural space may be obtained with a Heimlich flutter valve. This simple device is inserted into the second intercostal space anteriorly under local anaesthesia. It consists of a piece of latex rubber tubing one end of which is compressed and retains its flattened shape. This end of the valve remains collapsed at rest. Positive pressure exerted within the chest during expiration pushes trapped air out through the valve : when the intrapleural pressure is negative the valve closes, preventing entry of air from outside. The valve is strapped to the chest wall by adhesive tape after underwater drainage has been used successfully in inpatients, with complete expansion of the lung in 16 out of 18 (94%) within five days. More recently in a series of 104 episodes of pneumothorax 75% were managed successfully on an outpatient basis, 23% by observation and 25% using the Heimlich flutter valve. In those in whom this treatment was not successful, 16% were treated surgically ; bleb suturing with dry spone abrasion of the pleura to encourage adhesions was the operation of choice.—(*British Medical Journal*, 7th June 1975).

CRANIAL NERVE INVOLVEMENT IN LEUKAEMIA

(A Case Report)

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Involvement of the nervous system in leukæmia has been under study for many years. As early as 1823, Burns recorded the case of a patient with a strange enlargement of brain, whose death was attributed to chloroma. Careful examination of the anatomical, pathological and clinical aspects of the nervous system involvement in leukæmia has led to the isolation of several clinical patterns, known collectively as neuro leukæmic affections. Necropsy showed three fundamental types of nervous system changes :—(1) Leukæmic infiltration, (2) Hæmorrhages, (3) Degeneration. Infiltration is the commonest and it is observed in meninges, cerebrospinal axis, spinal ganglia, in both cranial and peripheral nerves. Involvement of cranial nerves in chronic myeloid leukæmia is rare and that too during the period of drug-induced hæmatological remission. Hence the following case is presented :—

Case report.—Mr. E. aged 59 years was admitted in the Neuro-Medical ward with the complaints of drooping of the right eyelid and numbness over the right side of the forehead.

Ten months ago he was treated in the same hospital in the General Medical wards for one and a half months, for chronic myeloid leukæmia with methotrexate tablets and splenic irradiations. Two months after discharge from the hospital he developed right-sided facial palsy and recovered within a month. Forty-five days ago he experienced double vision and pain over the right side of the forehead. Fifteen days later he developed a drooping of the right eye-lid which resulted in the disappearance of double vision. Pain over the right side of the forehead gave place to numbness in the same areas. He gave a history of exposure to venereal disease at the age of 25 years. There was no history of recurrent upper respiratory infection, diabetes mellitus, injury to the cranium, unconsciousness, fits, dysphagia, or weakness of the limbs.

On examination : The patient was well-built and moderately anæmic. There was no lymphadenopathy of superficial accessible lymph nodes. Higher functions were normal. On admission, he had complete ptosis on the right side with paralysis of the right medial, inferior and superior recti and right superior and inferior oblique with normally reacting pupils. There was no proptosis. Both fundi were normal. There was cutaneous hypoæsthesia and hypoalgesia over the district of the right frontal branch of ophthalmic division of trigeminal nerve. Left ocular movements and the pupil were normal. Patient had hepatosplenomegaly of a moderate degree. No other mass was felt per abdomen. A month later after steroid therapy he showed regression of ophthalmoplegia. At present he had partial ptosis and mild impairment of elevation of the right eye.

Investigations :—Previous admission (10 months ago) T. C. 1·2 laks/cmm. Hb : 80%. RBC 2·6 mill/cmm.

Smear report :—Chronic meyloid leukæmia.

At present :—TC 20, 400 cells/cmm RBC 3 million/cmm.

Smear report :—Blast 4, Premyelocyte 6, Myelocyte 20, Metamyelocyte 6, Juvenile and band forms 40, Mature cells $P_{15}E_2B_7M_0L_0$. *Report* : Ratio between RBC and WBC was altered with an increase in the granular series of WBC. Most of the cells were myelocytes, juvenile and band forms. There was an increase in the basophils. RBC appeared normocytic and hypochromic. Occasional nucleated RBC were seen. Platelets appeared to be reduced in number but normal in morphology. No parasites were seen.

Impression :—Chronic myeloid leukæmia - CSF analysis was normal without pleocytosis. Blood sugar, urea and cholesterol were within normal limits. GTT was normal. Blood VDRL was non-reactive. X-ray-skull :—superior orbital fissure and optic foramina were normal. Right carotid angiogram revealed no abnormality. No nasopharyngeal growth was detected by ENT examination.

Discussion :—This 57 year old man had partial external ophthalmoplegia with complete ptosis on the right side. He had also impairment of sensation over the right forehead indicating the involvement of V_1. The involvement of III, IV and V_1 would place the lesion close to the superior orbital fissure. A skiagram of the superior orbital fissure was normal. Angiogram did not reveal vascular or space occupying lesions. The association of leukaemia with cranical nerve palsies is due to infiltration at the level of superior orbital fissure. The external ophthalmoplegia had greatly regressed with steroid therapy. He was treated with methotrexate and splenic irradiation for chronic myeloid leukæmia 10 months ago. He also had a transient facial palsy. This patient had developed cranial nerve palsies during the drug induced haematological remissions. This phenomenon is commonly documented. The existence of blood brain barrier leads to a lower anti-leukaemic drug concentration in the CSF than in the blood. Therefore, the CNS lesions have time to develop and to become apparent.

Infiltration of both cranial and spinal nerve root is localised in the perineurium and perineural sheath with occasional propagation along the septa. Compression is also held responsible for the more frqeuent and typical involvement of cranial nerves in chloroma (particularly III, VII, and VIII pairs). Cranial nerve involvement is fairly frequent especially in acute leukaemia (22 out of 102 cases of neuroleukaemia reported by Brandt). Facial palsy is the most common sign. This may be unilateral as observed by Tapie and Cassar; Bass; Critchley; and Greenfield; or more frequently bilateral as seen by Eisenolohr; Kast; Ricca; Delissi; Radicchi; Revol *et al.*

Right facial paresis has been observed in acute cases of chronic myeloid leukaemia. As already stated, involvement of the facial nerve may be the first clinical sign of the underlying disease. The suggession of Rougues, first made in 1946, that leukæmia should be suspected in otherwise inexplicable double facial paralysis is still valid (Lubauge *et al*) Paralysis of the facial nerve is sudden and complete. Treatment may result in transient improvement but complete regression is rare. In the case of chronic lymphatic leukaemia reported right facial paralysis regressed fairly quickly and completely under cortisone therapy. Involvement of the acoustic nerve, leading to partial or sometimes total deafness (Kast; Scaiori and Nobice) or Meniere's syndrome is common. Unilateral or bilateral involvement of the common oculomoter nerve (Treumer and Wohlwile; Garvery and Lawrence and of the abducent nerve and the trigeminal nerve has also been reported.

Trigeminal involvement may be followed by neuralgic pains in an area served by one of its branches. (Ricca; Trounder and Wohlwill Williams *et al*) or by paresthesia. Signs of damage to other cranial nerves are less common. Dyspnœa probably caused by involvement of the recurrent laryngeal nerve was reported by Lugaresi *et al.* While paralysis of the tongue resulting from damage to the hypoglossal nerve was reported by Eisenlohr and by Delissi. In a case of hæmocytoblastic leukæmia, Poopi and Morgante observed right hypoglossal paralysis with hypotrophy of the right half of the tongue as the first clinical sign of blood disease. This was followed by right facial nerve palsy with loss [of taste and by signs of serious bilateral cochleovestibular lesions.

Simple atrophy of the optic nerve was noted in leukaemic leukaemia by Caries. Involvement of the cranial nerves are not common in chronic leukæmia especially chronic myeloid leukæmia.

Summary.—A case of right partial external ophthalmoplegia with ptosis and involvement of the right V, due to leukaemic infiltration in a patient with chronic myeloid leukaemia during drug-induced hæmatologic remission which showed improvement with steroid therapy, is reported.

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The other references quoted in the paper are from the text.book of Neurological Symptoms in Blood diseases by Nellod' Eramo and Maria Levi 1972.

SURGICAL APPROACH TO CORONARY PATIENTS

The comprehensive approach to the patient with angina pectoris must begin with a thorough history, physical examination, and noninvasive studies. The backbone of this diagnostic approach is the careful history and the exercise electrocardiogram. When the patient remains symptomatic on a full, vigorous medical program, and the patient is otherwise healthy and active, coronary angiography with the delineation of the antomy of the coronary circulation and the assessment of left ventricular function is indicated. Those patients with favourable anatomic basis for surgical intervention are referred for operation. Patients who have a successful surgical procedure with high flow rates recorded at the time of operation usually have a favourable clinical course. Patients with poorly functioning left ventricles, diffuse disease in the coronary arteries, and low flow rates in the bypass grafts are seldom benefited by the operation. The operative mortality rate is low and the first year survival rate is encouraging. The future of surgical management of coronary artery disease is uncertain and awaits long term follow-up.—(South Dakota, *Journal of Medicine*, July, 1975).

IBUPROFEN OR ASPIRIN IN RHEUMATOID ARTHRITIS THERAPY

Ibuprofen is a new, mild analgesic agent that may be useful in the symptomatic treatment of rheumatoid arthritis and osteoarthritis. Results of clinical studies have shown that its beneficial effects in these conditions are comparable, but not superior, to those of aspirin. However, at recommended doses it has less anti inflammatory effect than aspirin. Its usefulness as an analgesic in the treatment of other types of pain and as an antipyretic has not yet been established. Ibuprofen causes fewer adverse effects on the gastrointestinal system, including occult bleeding, than aspirin. Serious adverse reactions have not been reported. Thus Ibuprofen may be acceptable for use in patients who cannot tolerate aspirin or other antirheumatic drugs.

Ibuprofen is a nonsteroidal drug with analgesic, antipyretic, and anti-inflammatory properties that was recently introduced for use in antiarthritis therapy in the United States. In a year long double blind multiclinic trial in 885 patients with rheumatoid arthritis, Ibuprofen, was at least as satisfactory as aspirin, considering both efficacy and tolerance. In the majority of patients, daily doses ranged from 800 to 1,600 mg of Ibuprofen and 3 to 6 gm of aspirin. The drugs did not differ greatly in providing relief from arthritis symptoms, but Ibuprofen was definitely better tolerated, especially in regard to gastointestinal complaints. Seven per cent of the Ibuprofen group dropped out of the study because of adverse reactions, as compared with 16% of the aspirin group; 17% of the Ibuprofen group and 31% of the aspirin group had gastrointestinal symptoms.—(Belchman J. Wilbur *et al*, *J.A.M.A.*, 28-7-1975).

GLEANINGS

MEDICINE AND THERAPEUTICS

Diagnostic ascitic tap in cirrhosis — (*Brit. Med. Jour.*, 29-3-1975).

The dangers of immediate shock or hyponatremia or both have discouraged the use of paracentesis as a treatment for ascites in patients with cirrhosis. However, aspiration of 10—20 ml by syringe should be a routine, for this can be of great value in diagnosis, particularly in bacterial or tuberculous peritonitis, which may be clinically silent. Text-book descriptions refer to protein concentrations of less than 25g/l in uncomplicated cirrhosis, values greater than this being suggestive of tuberculous infection or hepatoma development. This view has now been challenged by Sampliner and Iber, who found that 19 of 98 consecutive patients with cirrhosis and ascites admitted to their care had an ascitic protein concentration of more than 25g/l the highest value being 43 g. In none of these patients was there any evidence of the text-book complications.

One possible explanation for high protein ascites in cirrhosis has been suggested by Witte *et al.*, who drew attention to the higher protein concentration of hepatic lymph when compared to splanchnic lymph. If ascites is derived largely from hepatic interstitial fluid, as occurs with postsinusoidal portal hypertension, it will have a higher protein concentration than that occurring when the portal hypertension is predominantly presinusoidal, when the ascites is derived from the splanchnic interstitial fluid. Interestingly, in the series of Witte *et al* patients with early cirrhosis had a much higher ascitic fluid protein concentration than those with "late" cirrhosis. They therefore suggested that the postsinusoidal area was the earliest site of vascular obstruction and that as the cirrhosis progressed pressure was transmitted back through the portal venous system, resulting in an increasing contribution of splanchnic interstitial fluid to the ascites.

Though it need not indicate a serious complicating condition, nevertheless, when a high protein fluid is found it should always be examined by microscopy and culture for tubercle bacilli—a protein concentration of more than 25 g/l is almost invariable in tuberculous peritonitis. Too often this diagnosis is not made until the patient reaches necropsy.

Pancreatic ascites is another condition associated with ascitic fluid of high protein concentration. Eighty-five cases have recently been reviewed by Donowitz *et al.* This condition occurs predominantly in alchoholics, and not surprisingly a number of the patients have associated liver disease. The mechanism of the ascites is not clear, but it usually occurs in association with either a pseudocyst or a ruptured pancreatic duct. The ascites is massive and often resistant to diuretics. Abdominal pain and tenderness need not be present, and there is no close temporal association to bouts of acute pancreatitis. Macroscopically the fluid is usually serous but may be serosanguinous. The amylase concentration in the ascitic fluid which may exceed 20,000 Somogyi units, is of diagnostic importance. Spontaneous bacterial peritonitis is being increasingly recognized in cirrhosis with ascites. The condition carries a high mortality (80-95%) and is not rare. Both Conn from U.S.A and Caroli from Paris have reported frequencies of 8% in patients with cirrhosis and ascites admitted to hospital. Characteristically, the patient has fever, abdominal pain, reduced or absent bowel sounds, and impending hepatic coma. Rebound tenderness is less common and sometimes the condition can be entirely silent. The ascitic fluid is usually cloudy in appearance with a white cell count—predominantly polymorphonuclear—above 1 x 10/1 (1000/mm.) and the responsible organism can often be identified from a Gram stain of the centrifuged deposit. In two thirds of cases this is a Gram negative bacillus. the pneumococcus accounting for most of the remaining cases.The protein concentration of the fluid in contrast to that in tuberculous peritonitis, is almost invariable low, a mean value of 18g/l being recorded in Conn's series. Why the peritonitis develops is unknown, but it has never been described in the absence of ascites.

OBSTETRICS AND GYNÆCOLOGY

Infective complications of the IUD. —(*The Med. Jour. Aust.*, 6-8-1975).

Recently the occurrence of septic abortion in women wearing a Dalkon Shield has re-emphasized the unresolved problem of the relationship between pelvic inflammatory disease and IUD contraception.

In June, 1974 Robins voluntarily suspended sales of the Dalkon Shield in the United States pending anintensive investigation of the effectiveness of all types of IUD. The Advisory committee appointed in August by this administration reached two major conclusions in December. They found that the IUD is a relatively safe and effective means of contraception that compares favourably with oral contraception, they also found that the effectiveness of the Dalkon Shield was not significantly different from other types of IUD, but that certain question of safety which had been raised could not be answered by the currently available data. They concluded that additional research was needed on all IUD complications including spontaneous abortion and uterine infection.

The Dalkon Shield has been available in Australia since 1970, and 100,000 have been inserted. Although 39 deaths have been reported in the U. S. since 1965, as a result of several types of IUD, there have been no reported fatalities from Australia and the Shield was not withdrawn from the market here. However, serious cases of septic abortion in Australia involving the Dalkon Shield have been reported including a series of four cases from Western Australa.

A more insidious and less documented possible complication of IUD usage is INFERTILITY resulting from endometritis and salpingitis. This pelvic inflammatory disease may result either from a spontaneous septic abortion or from endometritis unassociated with pregnancy.

Possible risk of resulting infertility is of graver concern in the nullipara, andfor this reason some gynaecologists withhold all types of IUD from their nulliparous patients. Although the present available data do not support this extreme view, they do indicate the need for caution and strict follow-up of these women. until more definite studies are available. The new copper devices have yet to demonstrate their immunity from this complication.

Carcinoma of Cervix : Evaluation of Treatment in Community Hospital.—(*New York State Journal of Medicine*, June, 1975).

This report is a review of 231 consecutive cases of invasive carcinoma of cervix treated from January, 1952, to December, 1967. The latter date was chosen so that all cases would have a follow up of five years or more.

Seventy per cent of patients were between the ages of forty one and seventy years, the mean age being fifty-three years. The youngest patient was twenty-two years of age, while the oldest patient was eighty five years of age. Ninety two per cent of the patients were married or had been married, 4 per cent were single and the remaining 4 per cent represented an unknown marital status, One hundred eighty-six patients (79 per cent) had one or more children 31 patients (15 per cent) were nulliparous, and in 14 patients (6 per cent) parity was not known.

Patients were treated with radiation therapy consisting of intracavitary radium and external radiation. Radium insertion was done in one or two sittings to deliver approximately 8,000-r. to point A. External radiation was given to cover the region of the lateral pelvic wall, to give a combined dose of approximately 5,000-r. to point B. External radiation was given by orthovoltage up to the year 1965 and after that Co (radioactive isotope of cobalt) teletherapy was used. A gammameter was used to calculate the amonnt of radiation to the bladder and rectum; the limiting dose was considered to be approximately 5,000-r. and the maximum intensity was considered to be 50-r. per hour. X-ray films of the pelvis with a contrast medium in bladder and rectum were taken after the intracavitary radium insertion to confirm the proper application of the radium system. Silver clips were applied to the cervix as markers to evaluate the relation of the radium system to the cervix.

One hundred and twenty-five patients survived five years or more, 85 patients died due to carcinoma of the cervix within five years. Eleven patients died due to intercurrent illness with no residual carcinoma at autopsy. Ten patients were lost to follow up.

Confidential inquiries into maternal deaths—(*British Med. Jour.*, 8-2-1975).

The appelling maternal death rate during the first quarter of this century has been dramatically reduced firstly by antibiotics to control sepsis and secondly by blood transfusion in cases of haemorrhage. Fortunately the rate has continued to fall because of improvements in our maternity services, but every maternal death is a tragic event, and every endeavour must still be made in each case to try to prevent similar circumstances which might lead to another death. This is the prime object of the confidential inquiries, concerning which the Department of Health has published triennial reports since 1952.

The four main causes of true maternal deaths—abortion, pulmonary embolism, toxaemia, and haemorrhage-have received particular attention in these triennial reports, and there has been a considerable reduction in the number of such deaths. Deaths from other causes such as anaesthesia. ectopic pregnancy, sepsis, amniotic fluid embolism,and ruptured uterus have therefore become relatively more important and are now receiving greater attention. A separate chapter is concerned with deaths occuring in relation to caesarean section.

Maternal deaths occur from a large number of associated causes, of which cardiac disease is the most important. This has also been discussed in a separate chapter, but recently greater consideration has been given to other associated causes, including diabetes, renal disease, intracranial hæmorrhage, and suicide, in the hope that the facts will be of some valve, even though avoidable factors are not often considered to be present in these cases.

The confidential inquiry into each death by the doctors concerned and the writing of each confidential report when conscientiously undertaken (and the majority of the forms are carefully completed) must be a valuable and instructive exercise. The triennial reports are of a statistical value, but in addition the lessons learnt by individual inquiries should become more widely known, so that they can have a greater effect in improving maternity care.

PAEDIATRICS

Acute cholecystitis in childhood.—(*British Med. Jour.*, 3rd May, 1975).

Fair, fat, fertile, and forty is an aphorism overdue for retirement. Every month the surgeon sees gallstone disease in elderly men and in young women in their early 20s who have borne only one child. Occasionally too, cholecystitis may be seen in a child. There is a surprisingly large number of reports describing this unusual occurrence, and the latest contribution is an account of 16 children with acute cholecystitis seen over 16 years at the Hospital for sick children, Toronto. All were under 15 years of age, two were less than 4 months old, and another five were under 5 years. In 11 the illness had lasted less than 48 hours, but in the other five it extended over one to four weeks. Abdominal pain was localized in the right upper quadrant in 12 patients and a tender mass was palpable there is seven. Plain radiographs of the abdomen were not helpful.

Thirteen patients came to operation and in ten in spite of their age, the signs were so typical that a correct diagnosis was made: two were thought to have acute appendicitis and one to have intestinal obstruction. Urgent cholecystectomy was carried out in 11 patients and in four of them the gallbladder was gangerenous. Two cholecystostomies were made.

Gallstones were present in only three of the 16 children, and this is in keeping with other accounts. Absence of calculi is almost the rule when acute cholecystitis occurs in infancy and the described cases—are remarkably similar all were under 3 years of age, all had pain for about 48 hours and presented signs of right sided peritonitis, and all were considered to have high retrocolic appendicitis. Because of the site of tenderness, three were opened through a right upper paramedian incision and in three the gallbladder was gangrenous. A similar picture has been described in older children.

Of 19 children seen in Liverpool who did have gallstones only two aged 3 months and 2½ years, presented acutely and both were thought to have perforated appendicitis. In the past cholecystitis in childhood has been said to be associated with the pigment stones of acholuric jaundice or with typhoid or streptococcal stepticæmia, but these causes are not often met nowadays, at least in Britain.

When Ulin and his colleagues made their survey of cholecystitis in childhood in 1952 they collected 326 cases from around the world but remarked that so distinguished a pædiatric surgeon as Orvar Swenson had told them that he had nerve seen an example. Though the ordinary surgeon is unlikely to see acute cholecystitis in a child more than once or twice in his working life, it should not be forgotten (along with acute pancreatitis) when a child has signs of acute inflammatory disease in the right upper quadrant of the abdomen. Retrocolic or subhepatic appendicitis is a much more likely cause of such signs but when they appear typical of acute cholecystitis the surgeon should make sure of good access by using a right paramedian or a subcostal incision, when the diagnosis is confirmed then cholecystectomy is the treatment of choice.

REVIEWS OF BOOKS

The Healing Journey (New Approaches to Consciousness—By: CLAUDIO NARANJO, Pp. 235; Published by: Hutchinson of London, Copies available: Ms. B. I. Publications Promotion Department 359, Dr. D. N. Road, Bombay-1. [Price Rs. 59/-

Emotional disorders are on the increase in most countries of the world. With the increasing knowledge about the nature and dynamics of emotional disorders, it becomes more and more obvious that for most of them no overnight cure will be discovered in the form of new and miraculous tranquillizer or antidepressant agents. The symptoms of these disorders are usually deeply anchored in the personality structure of the patient, and their causal treatment requires systematic psychotherapy that can trace the involved problems to their original sources.

The "*Healing Journey*" breaks this impasse with a brilliant account of brief therapy, through new 'feeling and fantasy' enhancing drugs. Claudio Naranjo describes his recent work that uses several totally new drugs in combination with psychotherapy. These drugs—MDA, MMDA, harmaline, ibogaine - allow quick access to unconscious feelings, and thoughts. They speed up the process of analysis and allow the patient to see through to the problems that have made him ill to begin with. As Naranjo puts it, the drug experience can open quickly the door of the prison cell in which the patient has been living: it is then up to the patient to decide whether he wishes to walk out through the door.

The four drugs with which this book feels fall, both chemically and in terms of their subjective effects, into two groups. That of the phenylisoprophylamines, comprising MDA and MMDA, is characterized mainly by its effects of feeling enhancement, sharpening of attention, increased fluency in associations and communications. The other, that of the polycyclic indoles (ibogaine, harmaline) could well be called, for its effects, "oneirophrenic," the term that Turner suggested for the harmaline alkaloids. Their effect on most subjects it that of eliciting vivid dreamlike sequences which may be contemplated while awake with closed eyes, without loss of contact with the environment of alterations of thinking.

This book is extremely informative, stimulating, and exciting reading...a must for all serious students of behaviour sciences...an indispensable guide for intelligent laymen, psychotherapists will find a mine of valuable information.

T. N. S. RAGHAVACHARI.

No Change (A Biological Revolution for Women)—Edited by WENDY COOPER, Pp. 176; Published by: Hutchinson of London, Copies available from: Ms. B. I. Publications Promotion Department 359, Dr. D. N. Road, Bombay-1
[Price: Rs. 59/- (£ 2·95)

For most women the first sign of the onset of the menopause is a change in the pattern of menstruation. If this has been regular, it becomes less so; if it has been irregular, it becomes more so; for other women the periods may just come at increasingly longer intervals, be unusually heavy, or simply become scanty and perhaps dark in colour, until, eventually, they cease altogether. The whole process may last for as long as five years, though in a few cases menstruation just ceases abruptly with no prior warning.

Medicine today recognises the menopause as a hormone deficiency condition, and offers women the chance to replace the oestrogen which failing ovaries can no longer produce to restore the glandular balance. Thousands of women all round the world are already availing themselves of this Hormone Replacement Therapy (HRT) and finding that a simple test and a simple tablet confer what the author describes as '*Biological Lib*'. From puberty onwards women are constantly in one way or another, the victims and the prisoners of their own biology.

Dr. Kaufman deplores women asking to have their 'oestrogen level' tendency to confuse oestrogen levels with sex appeal.He also insists that doctors must treat the women and not the smear though he does concede that serial smears, as opposed to single smears, may have diagnostic value. While the malignancy test requires a smear taken from the head of the cirvix at the top of the vagina, the *Maturation Index* requires a few cells from the lateral wall of the upper third of the vagina. The principle is simple. One of the main functions of oestrogen is to mature the cells of the vagina and keep it healthy and supple. A vaginal smear viewed under the microscope quickly reveals to the practised eye the number of mature cells, compared to the number of intermediate cells and immature cells. This ratio forms what is called the *Maturation Index*. It is no exaggeration to say that the powerful female sex hormone, oestrogen, is crucial in forming and maintaining a woman, and it begins its work as early six months before birth, to influence the growing foetus in the female direction.

Although oestrogen is totally essential to complete this differentiation, gender and sex are actually determined at the very moment of conception along with all other characteristics. If Wendy Cooper's book is widely read, it should do much to educate women about themselves and to stimulate them to seek medical advice instead of putting up with unpleasant and at times disastrous symptoms in the belief that they are the inevitable consequences of being a woman who must grin and bear it all.

The author's enthusiasm and dedication emerge from every page of the book, and if this leads her to over-simplification and even exaggeration at times this is no bad thing; such is the path the pioneer must tread.

T. N. S. RAGHAVACHARI

CORRESPONDENCE

To the Editor, 'ANTISEPTIC' Madras.

Sir,

This is in connection with your editorial WAR AGAINST DISEASE in Antiseptic of November, 1975.

Certain doubts occurred to me after going through that Editorial. Kindly go through the following and if you feel that such doubts are not reasonable, please enlighten me.

"The craze for the Western system made the introducers feel that the old traditional service provided by VAIDS, DAIS and HAKIMS should be completely done away with, although they had no viable alternative to provide".

I believe that the Modern Scientific medicine which you called Western Medicine, is a reasonable approach towards the problems of health. And a reasonable explanation based on experimental evidence (Scientific) either by Eastern Scientist or Western one is accepted. If anybody craves for introducing such reasonable methods of management of ailments for the benefit of our rural folk, one can not say that one is crazy. That never means that the traditional service should be completely done away.

"The community has been throwing up Semi-professionals who came in to be as dubbed quacks and totally discouraged. They were simple folk, inexpensive but all the same served the community over the years".

Nobody needs to dub one as a quack unless he is a quack. You maintain that they are inexpensive. But I know certainly that they are only seemingly inexpensive, but really expensive. For example, to a patient suffering from fever, they administer 25 to 50mg. of *Oxy tetra cycline* and charge about three rupees. If the fever comes down to normal level, after all you know that, it is only due to resistance of the body but not due to the effect of medicine. This happens when the disease is amenable to the protecting mechanism of the body and credit goes to the so called doctor. When the disease is not amenable to the body resistance, the patient receives several injections of medicine in the same sub-minimal doses, paying three rupeees regularly and when the disease gets advanced and threatens the life, he lands at a qualified doctor when the cost of the treatment goes to hundreds of rupees and so the qualified doctors are dubbed costly. So many times the easily curable disease like Enteric fever, Pyelonephritis, Amœbic Hepatitis, filariasis, Tuberculosis, etc., are made incurable, because the patients consume the various drugs together or separately in subminimal doses; and so they become ineffective; and the blame is put on the qualified doctors who try to help the patients in that stage. If you believe that your dubbed quacks are serving the community, because they are committed to minimise the population, I do not contradict.

If teachers are going to be trained to provide an elementary health service, I am sure both the education and the health will be hampered. If it is to supplement their meagre income then the aim of the Government will be certainly fulfilled.

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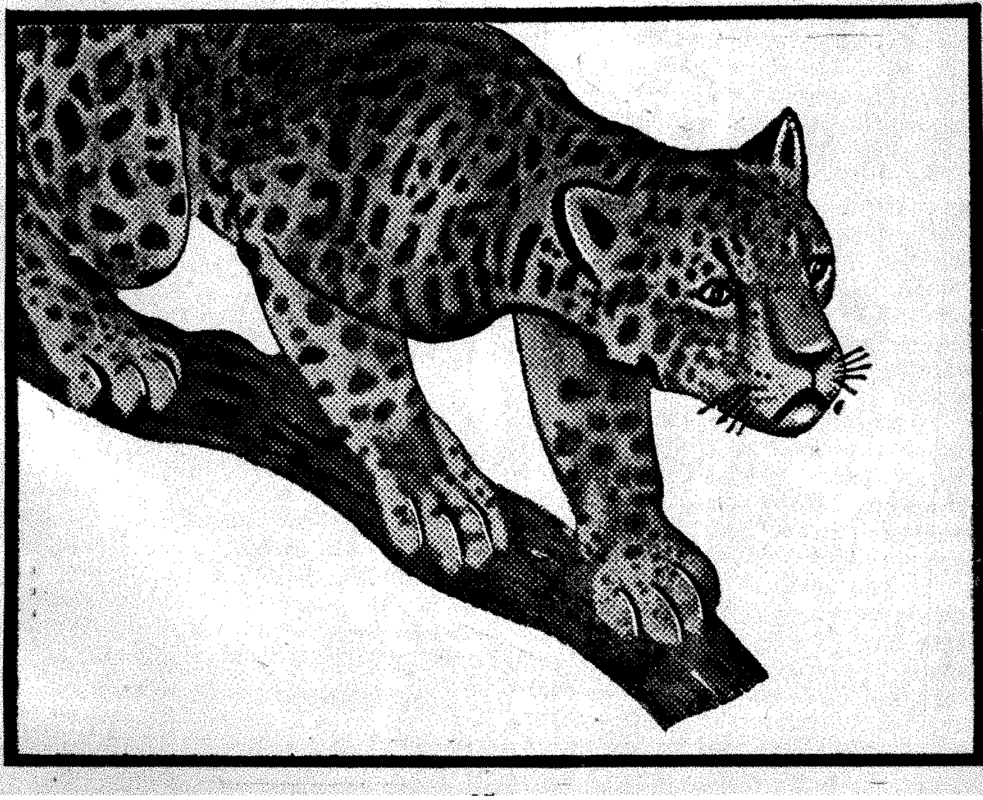

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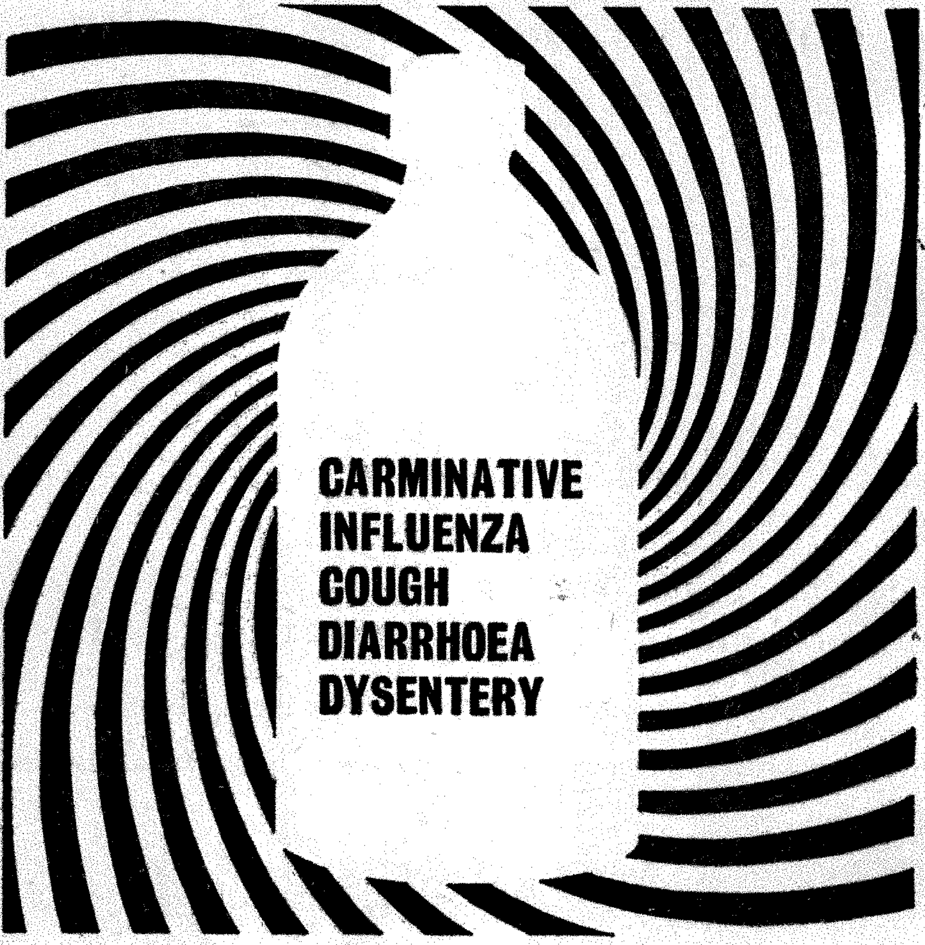

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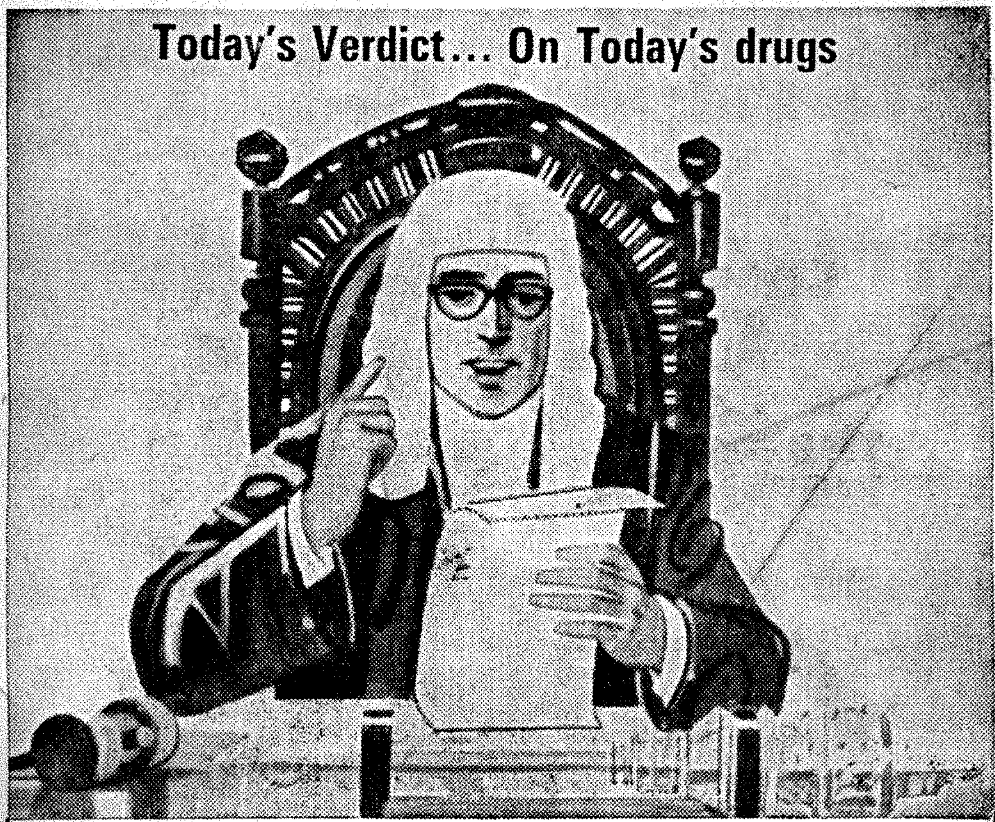
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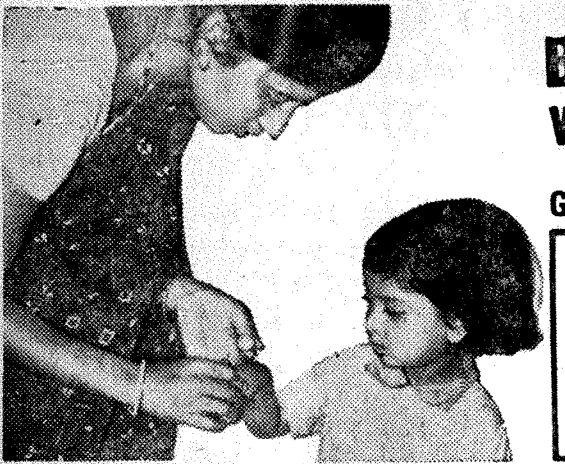

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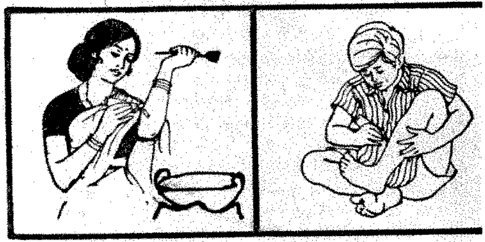

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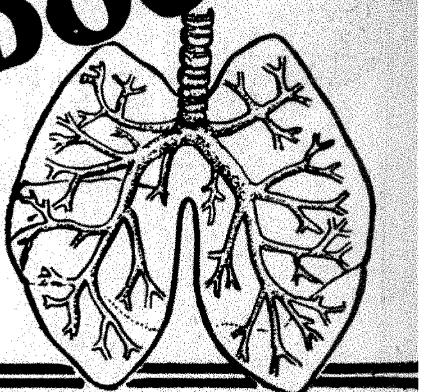

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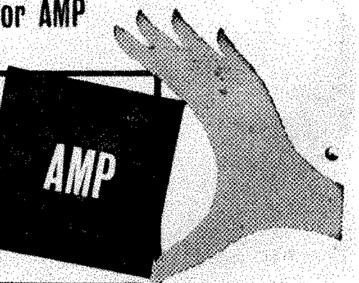

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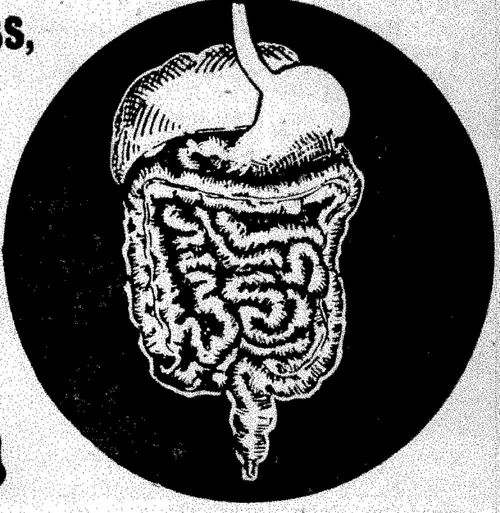

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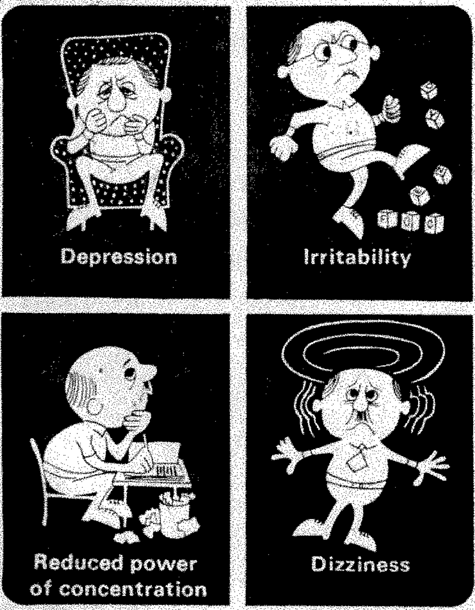

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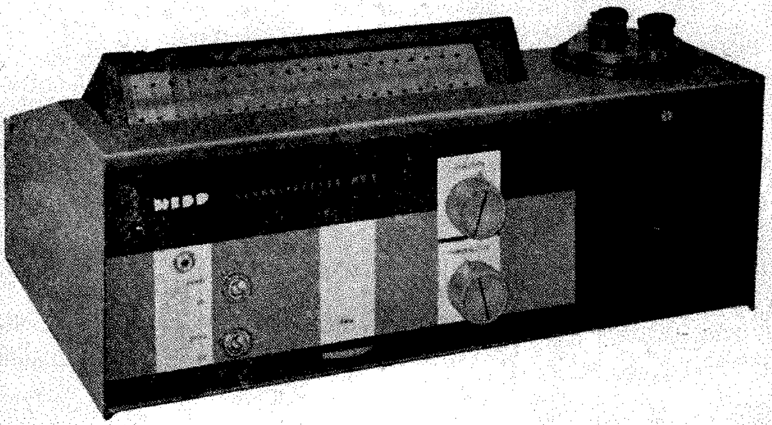

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